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FEASIBILITY STUDY FOR DECISION UNIT 4-1 AT SITE 12 TANK FARM 4 NS NEWPORT RI
5/1/2013
TETRA TECH INC

Feasibility Study

For

DU 4-1 at Site 12 - Tank Farm 4

**Naval Station Newport
Newport, Rhode Island**



**Naval Facilities Engineering Command
Mid-Atlantic**

Contract Number N62470-08-D-1001

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FEASIBILITY STUDY
FOR
DU 4-1 AT SITE 12 – TANK FARM 4
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Naval Facilities Engineering Command Mid-Atlantic
9742 Maryland Avenue
Norfolk, Virginia 23511-3095

Submitted by:
Tetra Tech
234 Mall Boulevard, Suite 260
King of Prussia, Pennsylvania 19406-1433

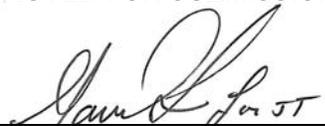
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PREPARED UNDER THE DIRECTION OF:

STEPHEN S. PARKER, LSP
PROJECT MANAGER
TETRA TECH
WILMINGTON, MASSACHUSETTS

APPROVED FOR SUBMISSION BY:



JOHN J. TREPANOWSKI, P.E.
PROGRAM MANAGER
TETRA TECH
KING OF PRUSSIA, PENNSYLVANIA

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ACRONYMS

µg/kg	Microgram per kilogram
µg/L	Microgram per liter
ARAR	Applicable or Relevant and Appropriate Requirement
BERA	Baseline Ecological Risk Assessment
bgs	Below ground surface
BSW	Bottom sediment and water
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action Navy
COC	Contaminant of concern
COPC	Contaminant of potential concern
CSM	Conceptual site model
CTE	Central Tendency Exposure
CTO	Contract task order
cy	Cubic yard
DEC	Direct exposure criteria
DERP	Defense Environmental Restoration Program
DO	Dissolved oxygen
DGA	Data Gaps Assessment
DoD	Department of Defense
DU	Decision Unit
Eco SSL	Ecological Soil Screening Level
EEQ	Ecological Effects Quotient
ELUR	Environmental Land Use restriction
EPA	Environmental Protection Agency
ERA	Ecological Risk Assessment
EU	Exposure unit
FFA	Federal Facilities Agreement
FS	Feasibility Study
gpm	Gallons per minute
GRA	General Response Action
HHRA	Human health risk assessment
HI	Hazard index/indices
HQ	Hazard quotient
I/C	Industrial/Commercial

IAS	Initial Assessment Study
ILCR	Incremental Lifetime Cancer Risk
IRP	Installation Restoration Program
LDR	Land Disposal Restrictions
LOAEL	Lowest Observed Adverse Effect Level
LUC	Land Use Control
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
mg/day	Milligram per day
mg/kg	Milligram per kilogram
mg/kg/day	Milligram per kilogram per day
MNA	Monitored natural attenuation
MW	Monitoring well
NA	Natural attenuation
NACIP	Naval Assessment and Control of Installation Pollutants
NAS	National Academy of Sciences
NAVFAC	Naval Facilities Engineering Command
NAVSTA	Naval Station
Navy	United States Department of the Navy
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NETC	Naval Education and Training Center
NOAEL	No Observed Adverse Effect Level
NPL	National Priorities List
NRCS	Natural Resources Conservation Services
NUWC	Naval Underwater Warfare Center
O&M	Operation and maintenance
ORP	Oxidation reduction potential
OSHA	Occupational Safety and Health Administration
OU	Operating Unit
OWS	Oil-water separator
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PDI	Pre-design investigation
POL	Petroleum, Oil, and Lubricants
PPE	Personal protective equipment
PPM	Parts per million
PRAP	Proposed Remedial Action Plan

PRG	Preliminary Remediation Goal
RAB	Restoration Advisory Board
RAGS	Risk Assessment Guidance for Superfund
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RfD	Reference dose
RG	Remediation goal
RI	Remedial Investigation
RIDEM	Rhode Island Department of Environmental Management
RME	Reasonable Maximum Exposure
ROD	Record of Decision
RPO	Representative Process Option
RSL	Regional screening level
SAP	Sampling and Analysis Plan
SARA	Superfund Amendment and Reauthorization Act
SVOC	Semivolatile organic compound
TBC	To-be-considered
TEQ	Toxicity Equivalency Quotient
TOC	Total organic compound
TPH	Total petroleum hydrocarbon
TRC	TRC Environmental Corporation
TRV	Threshold Reference Values
TSCA	Toxic Substances Control Act
TSDf	Treatment Storage and Disposal Facility
TtEC	Tetra Tech EC, Inc.
UCL	Upper Confidence Limit
UD	Udorthents – Urban land complex
UFP	Uniform Federal Policy
UPL	Upper Prediction Limit
USCS	United States Soil Conservation Service
UST	Underground storage tank
UTL	Upper Tolerance Limit
VOC	Volatile organic compound
WHO	World Health Organization

EXECUTIVE SUMMARY

This Feasibility Study (FS) develops and evaluates remedial alternatives designed to mitigate risks associated with contaminants of concern (COCs) in soil and groundwater at Decision Unit (DU) 4-1 at Site 12 – Tank Farm 4, also known as operable unit (OU) 11 of the Naval Station (NAVSTA) Newport (formerly the Naval Education and Training Center [NETC]) in Portsmouth, Rhode Island. DU 4-1 (the Site) occupies approximately 14 acres at the southwest corner of the 90-acre Tank Farm 4, which formerly contained twelve 2.5-million-gallon-capacity underground storage tanks (USTs) located upgradient of the DU 4-1 parcel. The former USTs at Tank Farm 4 were originally used to store No. 6 fuel oil, and several of the USTs were also used to store No. 2 heating oil for several years. The twelve former USTs were cleaned and demolished in-place in the late 1990's under State regulatory oversight. All remaining petroleum in the soil/groundwater onsite continues to be regulated under State authority.

DU 4-1 is the downgradient portion of Tank Farm 4, and while no USTs were located within the DU boundaries, two former oil-water separators (OWSs) as well as associated former discharge pipes and discharge areas, previously existed at the Site. One of the two OWSs (Ruin 1) was originally constructed to be a burning chamber where tank bottom sludge was burned. Later, it was converted to an OWS, fed by the bottom-sediment and water (BSW) piping through a gravity drain system from the upgradient USTs. During operation, excess fluids were drained from the burn pit/OWS to the wetland formed by Normans Brook to the south. The second OWS (Ruin 2) appears to have been installed for the purpose of accepting water from the ring drain (a groundwater relief system) surrounding the bottom of Tank 41, which was located to the north. It is speculated that Tank 41 was constructed in a location where the static groundwater surface was high and a separate relief line and OWS was found to be necessary from this single tank location.

Contamination resulting from previous operations, (including the burn pit / OWS structures and the soil and sediment affected by waste discharge) was excavated as a part of an investigatory removal action completed between 2004 and 2006 (Tetra Tech EC, 2007). This removal action was directed through identification of petroleum contamination only, measured as Total Petroleum Hydrocarbons (TPH), with a screening target level of 100 milligrams per kilogram (mg/kg). As a result, post-excavation confirmation sampling necessary for risk assessment purposes under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) contaminants was not conducted. Therefore, a Data Gaps Assessment (DGA) was conducted by the Navy between March and June 2010 to quantify human and ecological risks in this area following the removal actions. More recent data and the risk assessments based on current conditions (post-excavation) are presented in the DGA Report (Tetra Tech, 2011a).

Elevated lead levels in soils associated with the Site fence were also identified, and associated with the fence. These soils will be addressed through a fence maintenance action managed by the Naval Station and not a part of CERCLA.

The DGA screened the detected contaminants against conservative regional screening levels (RSLs) and State criteria that are based on a residential use of the properties and the use of groundwater as a residential source. Overall, the data collected as a part of the DGA show that the removal action captured most of the contaminants above screening levels, though an unknown quantity of residual contamination remains in place above these screening levels.

Several compounds were found in samples collected as part of the DGA at DU 4-1 that exceeded RSLs, primarily polynuclear aromatic hydrocarbons (PAHs) and metals in soil, groundwater, surface water and sediment. The human health risk assessment (HHRA) conducted for DU 4-1 using this data concluded that potential risks exist from unrestricted exposure to soil and groundwater, but risks from surface water or sediment exposures were below target levels. The screening ecological risk assessment (ERA) did not identify potential ecological risks to the terrestrial and aquatic receptors exposed to compounds found at DU 4-1.

The unacceptable risks (above the Environmental Protection Agency [EPA] threshold for human health) predicted in the HHRA are:

- Non-cancer risk for construction worker exposure to manganese in soil
- Cancer risk for resident exposure to PAHs in soil
- Non-cancer risk for resident exposure to arsenic, iron, manganese, and cobalt in groundwater
- Cancer risk for resident exposure to arsenic in groundwater

Preliminary remediation goals (PRGs) were developed using risks calculated for human receptors under the unrestricted use scenario. Analytical results from current soil and groundwater samples were compared with these remediation goals. The following observations are based on these comparisons:

- The soil PRG for one or more of the following compounds was exceeded in 30 of the 66 analyzed samples: arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene.
- Elevated concentrations of PAHs and arsenic in soil are present in localized areas at the Site. PAHs are present at the former terminus of a discharge pipe located at the northern edge of one of the previously excavated areas. Arsenic is present above PRGs at one isolated location at the Site.

- The groundwater PRG for one or more of the following compounds was exceeded in all 7 of the analyzed samples: cobalt, iron, and manganese. Although arsenic contributed to risk from groundwater, a PRG was not selected because concentrations were below the EPA maximum contaminant level (MCL). Groundwater PRGs were calculated assuming groundwater is used for residential purposes; however, such groundwater use at this Site is not a current or planned future use.

The FS identifies that an additional seven groundwater monitoring wells may be installed as part of the implementation of groundwater alternatives. These wells would also support pre-excavation sampling efforts to demonstrate that impacted groundwater at DU 4-1 is not a result of releases specific to the Site and to also confirm the presence or absence of a groundwater plume at the site. Additional wells can be included if it is determined to be necessary for the specific outcome of pre-excavation sampling efforts.

Remedial alternatives were developed from applicable technologies in order to address contaminants present in soil and groundwater at levels exceeding PRGs. Treatment, removal, and containment options were evaluated for both soil and groundwater for current and any potential future use.

For soil, containment options were rejected for full alternative evaluation because the area of soil exceeding cleanup goals for industrial use is small, and the area exceeding cleanup goals for residential use is large. During the screening of technologies, it was determined that covering small target areas to protect industrial and restricted recreational users was impractical, and covering the entire 14-acre Site to protect hypothetical future residents was not protective, nor implementable.

For groundwater, remedial alternatives were developed for monitored natural attenuation and for in-situ treatment. MNA was selected for evaluation because there is no current receptor for groundwater exposure, because there is low toxicity to the COCs in groundwater at the concentrations present, and because the conceptual site model suggests that the COCs are present in groundwater as a result of attenuation (bacterial action) of remnant petroleum at and upgradient of the site, which is expected to be in its conclusionary phases. Bioprecipitation was selected for evaluation as a treatment alternative to enhance the bacterial population already present, and in consideration of immediately downgradient wetlands that may be sensitive to more harsh chemical treatment chemicals.

The remedial alternatives evaluated for soil at DU 4-1 and the estimated net present worth costs are:

SO1 - No action – no cost

SO2 - Land use controls to prevent unrestricted use of the site, fencing and signage to control affected areas - \$198,000

SO3 - Target area excavation, offsite landfill disposal, and land use controls to prevent residential and unrestricted recreational use of the Site – \$912,000. The quantity of soil change pending results of the pre-excavation sampling program is expected to fall within the acceptable +50 / -30 percent range for estimating alternative costs under CERCLA.

The remedial alternatives evaluated for groundwater at DU 4-1 and the estimated net present worth costs are:

GW1 - No action – no cost

GW2 - Monitored natural attenuation and land use controls to prevent residential use of groundwater until groundwater cleanup standards are achieved – \$1,045,000. It is estimated from groundwater flushing calculations that the time required to achieve the PRGs is between 26 and 45 years.

GW3 - In-situ bioprecipitation process utilizing sulfate reducing bacteria designed to immobilize inorganic exceedances in groundwater – Cost \$2,775,000.

Viable remedial alternatives are evaluated in this FS in accordance with CERCLA. State of Rhode Island and EPA input on the evaluated alternatives is obtained during the review process for this document, prior to the recommendation or selection of a preferred alternative. A Proposed Plan will be drafted to present the Navy's preferred alternative following the review and approval of this FS report. A public meeting, public hearing, and public comment period will be held to solicit comments from the public on the preferred alternative for DU 4-1.

1.0 INTRODUCTION

This Feasibility Study (FS) report presents the development and evaluation of remedial alternatives designed to mitigate residual contamination at the Decision Unit (DU) 4-1, Site 12 – Tank Farm 4, located within the Naval Station (NAVSTA) Newport, Rhode Island (formerly the Naval Education and Training Center [NETC]). DU 4-1 (the Site) is defined as the portion of Tank Farm 4 where Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) contaminants were likely released, based upon records indicating the uncontrolled burning of tank bottom sludge and disposal of this material. Tank Farm 4 is identified by the U.S. Environmental Protection Agency (USEPA) as Operable Unit 11 at NAVSTA Newport, the NETC Superfund Site.

This report was prepared under the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Division, Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract N62470-08-D-1001, Contract Task Order (CTO) WE58, for submittal to NAVFAC Mid-Atlantic, NAVSTA Newport, USEPA Region 1, and the Rhode Island Department of Environmental Management (RIDEM). The Navy, the lead agency for Site activities, and the USEPA in consultation with RIDEM, work jointly to address the Navy's Installation Restoration Program (IRP) sites at NAVSTA Newport under the terms of a Federal Facility Agreement (FFA) entered into by the three parties.

This FS was developed in accordance with CERCLA requirements, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA)¹ and implemented by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP)², USEPA's FS guidance, and other relevant USEPA guidance (USEPA, 1988a). Consistent with the CERCLA process, this FS will support the selection of a preferred site remedy. The preferred remedy will be presented in a Proposed Plan for public review, followed by a Record of Decision (ROD) to document the selected remedy.

A comprehensive summary of historical activities and investigations at the Site, along with risk assessments compliant with CERCLA, is provided in the Data Gaps Assessment (DGA) Report (Tetra Tech, 2011a).

1.1 OBJECTIVES AND APPROACH

Based on the results of the DGA and the conceptual site model (CSM), this FS develops remedial action objectives (RAOs), preliminary remediation goals (PRGs), and remedial alternatives that will be protective

¹ CERCLA: 42 U.S.C. §§ 9601 *et seq*

² The NCP is detailed in Title 40 of the Code of Federal Regulations (40CFR), Part 300 (40CFR 300).

of human health and the environment and also comply with federal and state Applicable or Relevant and Appropriate Requirements (ARARs). The list of contaminants of concern (COCs) compiled for the media of concern was prepared based on the results of the baseline human health risk assessment (HHRA), the screening ecological risk assessment (ERA), exceedances of chemical-specific ARARs, and background levels of contaminants within the site (Tetra Tech, 2011a). The DU 4-1 COCs include polycyclic aromatic hydrocarbons (PAHs), arsenic, and manganese in soil³, and arsenic, cobalt, iron and manganese in groundwater.

Pursuant to the USEPA's FS guidance, the remedial alternatives are evaluated according to their ability to meet the following NCP evaluation criteria (USEPA, 1988a):

1. Overall protection of human health and the environment
2. Compliance with ARARs
3. Long-term effectiveness and permanence
4. Reduction of toxicity, mobility, or volume through treatment
5. Short-term effectiveness
6. Implementability
7. Cost
8. State acceptance
9. Community acceptance

The last two criteria, state acceptance and community acceptance, are evaluated after regulatory agency and public comments on the FS and Proposed Plan are received. Sustainability elements (e.g., green remediation) were also considered during evaluation of the remedial alternatives, as part of the implementability criteria.⁴

The information presented herein will be used to select remedial alternative(s) that comply with the requirements of the NCP. This FS report gives a conceptual overview of potential remedial alternatives and an assessment of their feasibility for the Site-specific conditions at the DU 4-1 portion of Tank Farm 4.

³ Elevated lead levels in soils associated with the Tank Farm 4 perimeter fence were also identified, and attributed to the fence, and not this decision unit. These soils will be addressed through a fence maintenance action managed by the Naval Station and not a part of CERCLA.

⁴ Green remediation is the practice of considering all environmental effects of remedy implementation and incorporating options to maximize net environmental benefit of cleanup actions (*Green Remediation: Incorporating Sustainable Environmental Practices into Remediation of Contaminated Sites*, Office of Solid Waste and Emergency Response. EPA 542-R-08-002. EPA, April 2008).

1.2 REPORT ORGANIZATION

- **Section 1.0** provides background information on DU 4-1.
- **Section 2.0** describes the development of RAOs and PRGs for the media of concern and COCs. This section also identifies and evaluates federal and state ARARs.
- **Section 3.0** describes the general response actions (GRAs) and presents the identification and preliminary screening of potential remedial technologies, and the detailed evaluation of candidate technologies and process options. Section 3.0 also presents the remedial alternatives and the evaluation criteria used in the FS.
- **Sections 4.0 and 5.0** present descriptions and proposed remedial alternatives for soil and groundwater, respectively. These sections provide detailed and comparative analyses of remedial alternatives with respect to the NCP evaluation criteria.

1.3 NAVAL STATION NEWPORT BACKGROUND INFORMATION

NAVSTA Newport is located approximately 60 miles southwest of Boston, Massachusetts, and 25 miles south of Providence, Rhode Island, on Aquidneck Island, which is illustrated on Figure 1-1. NAVSTA Newport occupies approximately 1,000 acres, with portions of the facility located in the City of Newport and the Towns of Middletown, Portsmouth, and Jamestown, Rhode Island. The facility layout follows the western shoreline of Aquidneck Island for nearly six miles, facing the east passage of Narragansett Bay.

The NAVSTA Newport facility has been in use by the Navy since the Civil War era. During World Wars I and II, military activities at the facility increased significantly and housing was provided for many servicemen. In subsequent peacetime years, use of onsite facilities was slowly phased out until Newport became the headquarters of the Commander Cruiser-Destroyer Force Atlantic in 1962. In April 1973, the Shore Establishment Realignment Program resulted in the reorganization of naval forces, and activity again declined. This reorganization resulted in the Navy excessing 1,629 acres of property.

From 1974 to the present, research and development and training have been the primary activities at NAVSTA Newport. The facility was renamed from NETC to NAVSTA Newport in 1998. The major commands currently located at NAVSTA Newport include the NETC, the Surface Warfare Officers School Command, the Naval Undersea Warfare Center (NUWC), the Naval War College, and many others.

NAVSTA Newport was listed on the National Priorities List (NPL) in November 1989 (the NPL listing is still under the previous name of NETC). A FFA for NAVSTA Newport was signed by the Navy, the State of Rhode Island, and USEPA Region I on March 23, 1992. The FFA outlines response action requirements under the CERCLA regulatory framework at NAVSTA Newport. The FFA was developed, in part, to

ensure that environmental impacts associated with past and present activities at NAVSTA Newport are thoroughly investigated and remediated as necessary.

1.4 TANK FARM 4 BACKGROUND INFORMATION

Tank Farm 4 occupies approximately 90 acres and contains 12 former 2.5-million-gallon-capacity underground storage tanks (USTs) originally used to store No. 6 fuel oil, with several tanks also used to store No. 2 fuel oil for several years. The USTs were cleaned and demolished in place in the late 1990s. DU 4-1 occupies approximately fourteen acres at the southwest corner of Tank Farm 4, and is bounded to the north and east by other portions of Tank Farm 4, to the south by a mix of undeveloped and residential property, and to the west by Defense Highway, beyond which lies Narragansett Bay as shown in Figures 1-2 and 1-3. Historical drawings and photos of the Tank Farm and DU 4-1 are provided in Appendix A1.

Tank Farm 4 is partially fenced, and signs are posted at entrances restricting access to authorized personnel. Activities within Tank Farm 4 are restricted to general industrial uses, and bow hunting by permit authorized by the commanding officer. There are no functional buildings at Tank Farm 4 and no above ground structures are currently present at DU 4-1.

DU 4-1 includes two former oil-water separator (OWS) areas, and associated discharge pipes and discharge areas combined with Normans Brook, as illustrated in Figure 1-4. The easternmost of the two oil-water separators (Ruin 1) was originally constructed to be a burning chamber where tank bottom sludge was burned. Ruin 1 was later converted to an oil-water separator, fed by the bottom sediment and water (BSW) piping which led from each tank. Excess fluids were drained from the burn pit/OWS to the wetland formed by Normans Brook to the south. The second OWS (Ruin 2) appears to have been installed for the purpose of accepting water from the ring drain surrounding Tank 41, which is located upgradient, to the east-southeast, of this OWS. It is speculated that Tank 41 was constructed in a location where the groundwater table was high, and a separate relief line and OWS was found to be necessary for the BSW line from this tank. Further investigations are ongoing in regards to Tanks and fuel systems at the Tank Farm 4 Site, upgradient of DU 4-1. These areas are being investigated under the Navy's Petroleum, Oil and Lubricants (POL) Program, and not under CERCLA.

As described in the DGA Report, contamination from previous activities, including the burn pit / OWS structure, and soil and sediment affected by waste discharged via piping, was excavated as a part of an investigatory removal action in 2004 and 2005 (Tetra Tech, 2011a; Tetra Tech EC, 2007). The results of total petroleum hydrocarbon (TPH) analysis were the primary guide for the excavation, and only limited confirmation sampling for CERCLA contaminants was conducted during this removal action; the available

analytical data was insufficient for performing a risk assessment. The DGA was conducted to provide current, post-excavation data for use in the performance of risk assessments. This FS has been prepared based on this new (post-excavation) data and the associated calculated risk.

1.4.1 History of Response Actions Pertaining to Site 12

This section presents a brief chronology of environmental response actions previously conducted at Site 12 as a part of the IRP for CERCLA sites at NAVSTA Newport, and particularly those pertinent to the DU 4-1 area. The following chronology is based on information provided in historic records and prior reports. Appendix A1 provides historical drawings and photos of the area and of Tank Farm 4.

September 11, 1980 – The Naval Assessment and Control of Installation Pollutants (NACIP) program was initiated. The purpose of this program was to systematically identify, assess, and control environmental contamination from past use and disposal of hazardous substances at Navy and Marine Corps installations.

March 1983 – The Initial Assessment Study (IAS) of NAVSTA Newport was completed in 1983 (Envirodyne Engineers, Inc., 1983). The IAS Report identified areas at the NETC, presently known as NAVSTA Newport, where potential contamination from past waste disposal or handling practices may pose human health or environmental risks. For Tank Farms 4 and 5, the IAS concluded that the Sites should be retained due to the practice of disposal of burning tank bottom sludge. Design records for the fuel storage systems suggested disposal by placing sludge on the ground in pits and burning off the residual fuel. Further investigations concluded that this practice was not undertaken at Tank Farms 4 and 5, but that sludge was disposed of through central burning chambers (one at each Tank Farm) which were later converted to OWSs and discharged to onsite wetlands.

1984 – The Defense Environmental Restoration Program (DERP) was established to promote and coordinate efforts for the evaluation and cleanup of contamination at Department of Defense (DoD) installations. A major element of the program was the establishment of the IRP, which focuses on the investigation and cleanup of contaminated sites in compliance with the procedural and substantive requirements of CERCLA, as amended by SARA, as well as regulations promulgated under these acts or by applicable state law.

1988 – A Technical Review Committee was convened to facilitate communication of information with regard to actions to be undertaken at NAVSTA Newport. Technical Review Committee members include representatives from the Navy, USEPA Region I, RIDEM, City of Newport, Towns of Portsmouth and Middletown, and local citizens' groups.

November 21, 1989 – NAVSTA Newport was listed on the NPL as the “NETC.”

1990 – A Community Relations Plan was issued for NAVSTA Newport by the Navy. Public Information Repositories were also established to allow public access to NAVSTA Newport documents. The NAVSTA Newport documents are located in the public libraries in Newport, Middletown, Portsmouth, and Jamestown, Rhode Island.

1992 – As part of an Remedial Investigation (RI) Report for NETC Newport, forty-six soil samples, eight groundwater samples, limited surface water and sediment samples, and soil gas samples were collected across the Site (TRC Environmental Corporation [TRC], 1992). Additional studies were recommended by TRC to further define the extent of TPH in surface soils, and to determine the significance of elevated metals concentrations in the soil and groundwater (TRC, 1992). Tank Farm 4, borings and wells were installed across the Site in order to identify the presence of sludge pits which were speculated to be present from disposal of tank bottom sludges on the ground surface.

1995 – The Navy established the Restoration Advisory Board (RAB) to provide ongoing information to the citizens in Newport, Middletown and Portsmouth, Rhode Island on the status of IRP sites at NAVSTA Newport.

2004 – 2007 - The Navy began field work on a Site Investigation and removal action in October 2004 to resolve conflicting information regarding the reported practice of burying sludge on site, to investigate and remediate the process piping and adjacent soil not evaluated previously, and to investigate and remediate review areas identified by Tetra Tech, EC (TtEC, 2007). The work included investigating for possible former sludge disposal pits, assessing piping not previously assessed, demolishing and removing piping from a former OWS / burn pit, and sampling other Review Areas, including fence lines and transformer vaults. No evidence of former sludge pits was found. The results of the Site Investigation are summarized in the Final Closeout Report for Sludge Disposal Trenches and Review Areas at Tank Farms 4 and 5 (TtEC, 2007). The areas investigated and results associated with the DU 4-1 area are summarized below:

- Former burn chamber / OWS (Ruin 1): Soil samples were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals and polychlorinated biphenyls (PCBs), with two samples analyzed for dioxins/furans in addition to the compounds listed above. Exceedances were detected in one sample for PCBs, in two samples for dioxin and arsenic, and in one sample for manganese. Despite exceedances of the USEPA Region 9 PRGs, the area was backfilled with no removal. The Report noted that this portion of the Site may require a risk analysis in the future. Samples collected at the discharge outfall exceeded RIDEM Residential Direct

Exposure Criteria (DECs), or USEPA Region 9 PRGs if DECs were not available, for SVOCs, metals and dioxin.

- In January 2005, one outfall sample was collected from the Ruin 1 straight line discharge pipe outfall and submitted for TPH analysis, with a result of 33,600 parts per million (ppm). In March 2006, eight additional samples were collected in a radial pattern from the outfall, and analyzed for TPH: resulting concentrations ranged from 366 ppm to 11,400 ppm. Five additional samples were collected, with two samples exhibiting TPH concentrations of 4,350 ppm and 817 ppm, respectively.
- A total of 2,293 tons of soil from an area of 13,700 square feet and to a depth of 3 feet were excavated and disposed of offsite. This information is based on the results of the soil samples collected from the Ruin1 straight line discharge area.
- One sediment sample was collected from the Ruin 1 diagonal discharge pipe outfall and submitted for TPH analysis, with a result of 72 ppm. No further action was warranted at this location.
- One sample was collected from the Ruin 2 discharge pipe outfall and analyzed for TPH and SVOCs. All SVOCs were non-detect and the TPH concentration of 61 ppm was below the RIDEM Residential DEC for TPH of 500 ppm.
- Historical drawings showed a streamlet, groundwater seep, or drainage swale in the area southwest of former Tank 41 and northeast of Ruin 2. This area was inspected during a site walk and a several-hundred-foot-long swale was observed in the area where the historic drawing indicated. Three soil samples were collected from the swale from locations chosen by RIDEM. TPH concentrations ranged from not detected to 50 ppm. No further action was warranted at this location, based on this data.

Other investigation and removal action work was conducted at Tank Farm 4 outside the DU 4-1 area, which included the electrical substations, the transformer vault, sheds, fences, pipelines valve chambers, and various buildings. In addition, test excavations were conducted around tank locations in order to attempt to locate other sludge burning areas. No other evidence of sludge burning or disposal was found (TtEC, 2007).

2006 – The Basewide Background Soil Investigation was conducted to provide a background data set for comparisons to soil and sediment data collected from all sites at NAVSTA Newport. The objective of the investigation was to identify inorganic compounds expected to be present, had the various Navy activities not occurred. Both naturally occurring and anthropogenic metals were included. Surface and subsurface soil samples were collected at off-site locations, and included representative soil types mapped by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) for the IRP Sites at NAVSTA Newport. The background data set was evaluated and published as the Basewide Background Soil Investigation (Tetra Tech, 2008a).

2010 – A DGA was conducted to provide up-to-date, site-representative data and to use these data to aid in determining residual risks to potential human and ecological receptors, following the completed removal actions conducted at the Site, so that the best path forward for each area of the Site could be determined. The DGA included the establishment of Category 1 and 2 DUs, collection of soil, groundwater, surface water and sediment samples, a baseline HHRA and a Screening ERA. Further details regarding sample results and risk assessment results can be found in the DGA Report Category 1 Areas (Tetra Tech, 2011a). A separate report contains the results of the Category 2 investigation, which focuses on the former USTs upgradient of DU 4-1 (Tetra Tech, June 2011b).

1.4.2 Removal Actions Associated with DU 4-1

TtEC conducted a series of investigations and removal actions between 2004 and 2006, under CERCLA authority, at Tank Farms 4 and 5, to address numerous areas, including USTs (to further investigate the possible presence of sludge disposal pits), process piping and pipe chambers, and “review areas” identified by RIDEM. This effort included the investigation, evaluation and demolition of the two former OWSs at Tank Farm 4. Discharge piping from the OWSs were additionally investigated and remediated, and affected soil and sediment from the discharge areas were excavated and removed from the Site. Finally, the investigation activities addressed BSW piping, the storage sheds, transformers and electrical buildings, and other areas of interest identified by the RIDEM. The Navy investigated these areas and conducted soil removal actions, as needed, to assure rapid reduction of contamination present.

The RIDEM Residential DECAs were used as remediation goals (RG) for this work: in the UST areas, for TPH; and in the process piping and “review areas”, for TPH, SVOCs and VOCs. Not all soil with COCs at levels exceeding the RGs was removed during this work. However, as indicated by a comparison between the exploratory analytical data and the post-excavation (confirmatory) analytical data, the rapid reduction of contamination was achieved. Data from samples collected during this investigation are provided in Appendix A2, taken from the Tables portion of the Closeout Report, which documents the findings, including all the confirmatory sampling results (TtEC, 2007). This information was also summarized in the Technical Memorandum for Data Summary and Plan for Risk Assessment, Tank Farms 4 and 5 and was the basis for the DGA work (Tetra Tech, 2008b). CERCLA requires that risk-based decisions are to be verified, the DGA was designed to determine the risk (if any) from the remaining soil at DU 4-1.

1.5 GEOLOGY AND HYDROGEOLOGY

This section presents a summary of regional and Site geologic and hydrogeologic features. The information presented below is based on lithologic information collected during the 2010 DGA, literature

review, and other site reports, as presented in the DGA Report (Tetra Tech, 2011a). Figure 1-5 shows the locations of two geologic cross-sections prepared for DU 4-1, cross-sections A-A¹ and B-B¹, presented as Figures 1-6 and 1-7, respectively.

1.5.1 Regional Geology and Hydrogeology

NAVSTA Newport is located at the southeastern end of the Narragansett Basin. The rock types of the Narragansett Basin are non-marine sedimentary and meta-sedimentary rocks of Pennsylvanian age. The bedrock underlying the facility is comprised almost entirely of the Rhode Island Formation. The Rhode Island Formation in this area has been metamorphosed and consists of metaconglomerate, metasandstone, schist, carbonaceous schist, phyllite and graphite. Pre-Pennsylvanian igneous and metamorphic basement rocks are below the Pennsylvanian-age bedrock of the Narragansett Basin.

The overlying surficial deposits are Pleistocene-age glacial sediments, ranging in thickness from 1 to 150 feet, and consisting of glacial till and glacial outwash drift deposits. The glacial till is the more extensive of the glacial deposits in Rhode Island and is generally unstratified and heterogeneous.

Many areas on Aquidneck Island obtain potable groundwater from wells completed in unconsolidated glacial till and outwash deposits, and in the underlying bedrock. The average depth to the unconfined aquifer at the facility is 14 feet. In the NAVSTA Newport area, glacial till deposits are typically less than 20 feet thick. Well yields range from 1 to 120 gallons per minute (gpm), although the upper limit of this well yield is likely from an outwash deposit that is well sorted and stratified. Wells completed in till typically yield a few hundred gallons of water per day (at a rate of less than one gpm). In bedrock wells, yields range from less than 1 to as much as 55 gpm and are highly dependent on the presence of joints and fractures in the rock. Most groundwater in the area is soft or moderately hard and in scattered locations of NAVSTA Newport, pumping of groundwater has led to salt water intrusion.

1.5.2 Site Geology and Hydrogeology

Information presented on Site geology and hydrogeology is derived from the DGA Report, which assimilates historic information developed for this portion of Site 12 with the 2010 data generated during the DGA field investigations.

Overburden thickness at Tank Farm 4 ranges from approximately 1 to 40 feet, and tends to increase in flat-lying areas and become thinner on slopes. Some of the thickest overburden is present in the areas immediately surrounding the tanks because the bedrock was blasted to make room for tank installations, after which the excavations were filled in.

Overburden materials at the Site, classified as either glacial till or fill, are generally mixtures of silt, sand and gravel, as well as boulders and gravel-sized pieces of bedrock. In soil borings, the fill can be difficult to distinguish from native materials because it typically appears to be surficial materials that originated from another part of the Site or that resulted from the blasting of the bedrock during tank installation. The blasted bedrock is difficult to distinguish from the weathered bedrock, and the weathered bedrock/overburden interface is difficult to determine, due to the soft and extremely weathered nature of much of the bedrock. Density of the overburden generally varies from loose to medium dense, but is not a reliable indicator as to the nature of the overburden materials (native vs. fill).

The overburden is dominated by sandy silts and silty sands, although some locations also include gravel mixed in with these silts and sands. The gravelly materials are usually present deeper in the subsurface and/or directly above the bedrock surface, while the silts and sands occur more continuously and are more likely to be found near the ground surface.

Bedrock underlying Tank Farm 4 has been identified as a black/gray shale, slate and/or phyllite, depending on the degree of metamorphism, and is encountered between approximately 1 and 40 feet below ground surface (bgs). Due to the highly weathered bedrock surface in some areas, it can be difficult to determine the exact depth of the bedrock/overburden contact, as noted above. Most of the bedrock encountered in borings can be easily broken along planes of bedding and/or foliation and is also highly fractured.

Bedrock within the locale of DU 4-1, as encountered during the DGA, was characterized as fine-grained, foliated, metamorphic rock consisting of shale and phyllite. The upper surface of the bedrock is weathered, and the bedrock is typically soft, as evidenced by bedrock boreholes advanced using roller-bit drilling methods. The depth to weathered bedrock observed during drilling within DU 4-1 was between 2 and 16 feet bgs. More competent bedrock was encountered between 1 and 8 feet below the top of weathered bedrock.

The depth to groundwater at Tank Farm 4 ranges from approximately 1 to 30 feet bgs. Groundwater flow is in a westerly direction, generally following surface topography, and ultimately discharges into Narragansett Bay. As part of a separate effort, horizontal hydraulic gradients were calculated for the Tank Farm 4 Site bedrock (between monitoring well (MW)-906 [upgradient of DU 4-1] and MW-919 and between MW-903 [upgradient of DU 4-1] and MW-922) and overburden (between MW-808 [upgradient of DU 4-1] and MW-914) using May 2010 groundwater elevation measurements. Horizontal gradients ranged from approximately 0.02 to 0.04, respectively.

Groundwater flow across DU 4-1 does not vary from the westerly direction of flow across Tank Farm 4. DU 4-1 is located in the most downgradient section of Tank Farm 4, so that groundwater flow entering DU 4-1 is coming from the other parts of the Tank Farm located to the east. Groundwater from DU 4-1 discharges either to Normans Brook or travels further through subsurface materials, eventually discharging into Narragansett Bay. The groundwater potentiometric surface measured at DU 4-1 was between 12 feet bgs and 1.3 feet above ground surface.

A positive potentiometric surface indicating artesian conditions was measured in the area around Ruin 2, located at the bottom of a steep hill that rises up to former Tank 41, to the east and north. Groundwater conditions in the area of Ruin 2 were observed through the installation of monitoring wells MW-912, MW-913 and MW-919; although the potentiometric surface is below ground surface at MW-919, in the area closer to Norman's Brook.

Groundwater flow conditions in the area of Ruin 1 were observed at monitoring wells MW-920, MW-921, MW-922 and further downgradient well, MW-914. In the area downgradient from Ruin 1, in the wetland at MW-914, groundwater levels were measured above the ground surface (artesian conditions).

1.6 TERRESTRIAL AND AQUATIC HABITATS

Tank Farm 4 is currently unoccupied and utilized by local wildlife for feeding, foraging and home habitat. Normans Brook transects the southern portion of Tank Farm 4, within DU 4-1. The brook flows westerly to Narragansett Bay and provides surface drainage for the northern portion of the facility and for the agricultural, residential and commercial areas to the east. Portions of the site associated with Normans Brook are within the 100 year flood zone (Zone AE) as defined by FEMA (FIRM map 44005C0083H). Vegetation consisting of grass, dense brush, trees, and woodlands is found between the former tanks and on the property perimeter. Vegetation in the vicinity of the tanks has been periodically cleared for construction and investigation efforts, but new growth is rapid if not maintained.

DU 4-1 occupies approximately fourteen acres at the southwest corner of Tank Farm 4, as shown in Figure 1-3. The Site includes the downstream portion of Normans Brook and the associated wetland complex. Normans Brook appears to have been partially impounded by the headwall constructed for a culvert under Defense Highway at the westernmost portion of the Site, which may have created part of this wetland area. Normans Brook discharges through a culvert under Defense Highway which in turn discharges to Narragansett Bay. Habitats throughout and adjacent to the Site are characteristic of overgrown landscapes of lightly industrialized or commercial areas. Historically, the Site was agricultural pasture until the tank farm was installed, after which the ground surface features were made to mimic agricultural land so as to hide the presence of the fuel tanks from the air. Since the tank farm was taken

out of use, the Site has become overgrown, with the exception of short-term construction and investigation efforts, during which vegetation has been disturbed in localized areas.

Normans Brook has not been inspected to determine presence of fish species, however, based on the low flow and small size of the brook, it is not expected to provide significant fish habitat. Wetland vegetation and significant suitable habitat for amphibians, reptiles and birds are present at the Site and to the east, where groundwater breakouts from the hills discharge into the brook. The Newport natural resources coordinator, Ms. Shannon Kam was contacted in May 2012, and reported that there are no records of rare or endangered species present at Tank Farm 4. The upland areas of the Site are mainly open grassland with some dense ground cover of herbaceous plants. The surrounding area consists of woody shrubs, saplings, and trees.

Disturbance of the Site's natural community is present, as part of the larger Tank Farm and because of other large undeveloped parcels in the area to the north, the Site provides important habitat for terrestrial, wetland, and avian species, both local and transient. The dense vegetation in the area provides excellent cover, foraging, and breeding/nesting areas for birds, mammals, reptiles, and amphibians.

1.7 CONCEPTUAL SITE MODEL

A CSM depicts the relationships among the following elements, which are necessary for defining complete exposure pathways:

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

The elements of the CSM listed above establish the manner to which a potential receptor may be exposed to chemicals present at the Site. The degree of risk incurred by a potential receptor varies according to the means and duration of exposure, and the specific chemical to which the receptor is exposed. An exposure, however long in duration, does not necessarily result in an "unacceptable" health or environmental risk, although risks generally increase with increased frequency and/or duration of exposure.

Sections 1.4 to 1.6 of this report present detailed information on the Tank Farm 4 Site location, description, and history. The summary CSM is presented in Appendix A3 of this report, and provides a graphic description of the Site releases as well as a summary of the transport mechanisms available to

the contaminants still present. The receptors are described with the associated risks, as evaluated in the DGA Report and summarized later in this section.

The Site problem, based on this CSM is best summarized as follows: Past operations in the area of DU 4-1 are presumed to have resulted in the release of contaminants to surface and subsurface soil, groundwater, and surface water/sediment. The presumed source, which has since been eliminated, was burned and unburned fuel sludge and associated contaminants:

- Contaminants associated with the burning of sludge and from discharge of burned sludge to the wetland areas were likely released to the ground at and downgradient of the former burn chambers.
- Contaminants passing through the OWSs would most likely have been released to the brooks and entrained within the wetland soils.
- These contaminants were mitigated significantly through the removal of the burn chamber/OWS (Ruin 1), and the OWS (Ruin 2). Contaminants were further mitigated through the removal of the pipelines and the soil and sediment around the discharge areas at the wetland.

The CSM suggests possible organic and inorganic contaminants in soil, groundwater, sediment and surface water. In particular, metals, PAHs, and dioxin/furans, measured as toxicity equivalency factors (TEFs, were analyzed and evaluated during the DGA. TEFs that relate the toxicity of various dioxin/furan congeners to the toxicity of 2,3,7,8 TCDD (as accepted by USEPA, 1989) were published by the World Health Organization (WHO) in 2005 and updated in 2006, were used in the baseline human health risk assessment⁵). The potential presence of these contaminants was considered, based on the possibility of historical spills or as a result of atmospheric deposition. Reducing conditions that are created by biological degradation of released petroleum in soil (most of which has since been removed) may also affect hydrogeological conditions. The risk assessments, described in the following subsections, addressed the levels of contaminants found in samples and reported in the analytical results.

1.8 NATURE AND EXTENT OF CONTAMINATION

Analytical results from soil samples collected within DU 4-1 during the DGA indicate few contaminants present, primarily at low concentrations. SVOCs (mainly PAHs) and metals are the primary analyte groups found to exceed applicable screening criteria. The full data set from the DGA Report is provided in Appendix A-4.

⁵ The hazard indices for dioxins/furans presented in the HHRA were calculated using an oral reference dose of 1E-9 mg/kg/day, which was obtained from the Agency for Toxic Substances and Disease Registry (ASTDR). In February 2012 USEPA published a new value oral reference dose in the Integrated Risk Information System (IRIS). The new oral reference dose of 7E-10 mg/kg/day is slightly more toxic than the value used in the HHRA. The new reference dose for dioxins/furans was used to recalculate hazard indices and the results do not change the conclusion of the HHRA. The hazard indices calculated using the new oral reference dose are orders of magnitude less than the acceptable level of 1.

Higher concentrations of PAHs are present in soil samples collected around the discharge area southeast of Ruin 1, shown in Figure 1-4. The seven surface soil samples collected from the northern and southern edges of the former soil/sediment excavation area were found to contain total PAHs ranging between 91 and 976 micrograms per kilogram ($\mu\text{g}/\text{kg}$).

Surface soil sample SB-934, shown on Figure 1-4, contained 217,000 $\mu\text{g}/\text{kg}$ total PAHs. This location is at the eastern edge of the excavation area and about 20 feet east of the terminus of a Ruin 1 discharge pipe. Surface soil samples collected uphill from the Ruin 1 and Ruin 2 discharge areas contain total PAHs ranging between non-detect and 193 $\mu\text{g}/\text{kg}$. Increased PAHs around the terminus of the discharge pipe for Ruin 2 are also noted, however, the highest concentration of total PAHs in the Ruin 2 area is just upstream of the discharge pipe. Overall, concentrations of PAHs in subsurface soil are markedly less than concentrations of PAHs in surface soil at individual locations and as a group.

Unlike PAHs, a distribution pattern of metals at elevated levels in soil around discharge areas was not evident. The two metals in soil with concentrations consistently above screening criteria were arsenic and chromium. Arsenic has been found to be present in elevated concentrations in soils on Aquidneck Island. One location was found where arsenic appeared to be elevated in surface soil (SB943 – 59.5 milligrams per kilogram [mg/kg]). Concentrations of chromium in surface and subsurface soils, though above screening criteria, are within site background levels and are not considered to be site-related (Tetra Tech 2008a, and Tetra Tech, 2011a).

Sediment collected from DU 4-1 showed essentially the same results as soil. Few SVOCs were detected, and benzo(a)pyrene, which was detected at elevated levels in every sample collected, showed no clear distribution pattern that would suggest an uncontrolled source. Arsenic and chromium were detected at similar concentrations in sediment throughout DU 4-1.

Surface water sample results for four of the ten collected samples indicated the presence of arsenic at levels exceeding the USEPA Regional Screening Level (RSL) for tap water; one PAH, benzo(a)anthracene, exceeded the RSL for tap water in two of the ten surface water samples.

Analytical results from a groundwater sample collected from MW913 near Ruin 2 indicated detected levels of PCBs and endrin aldehyde. However, upon review, it was found that this sample was collected as a duplicate, and only one of the two duplicate aliquots was found to contain these compounds. Based on this discrepancy, further evaluation of the analysis of these two duplicate samples was conducted, and it was discovered that cross-contamination was likely to have occurred in the laboratory during the sample preparation step, which affected one aliquot, but not the other. Since there was uncertainty in the results from this well, resampling of the well was conducted on November 8, 2012, and analysis of

duplicate samples from this location showed no PCBs or pesticides detected. Sample collection paperwork and results provided by the analytical laboratory are presented in Appendix A7 of this report. Based on the laboratory handling of the original sample (May 12 2010) and the analytical results of the November 2012 sample, the PCBs and endrin aldehyde originally reported for this location were both eliminated as potential Site contaminants.

The only constituents exceeding screening levels in Site groundwater are the metals arsenic, cobalt, iron and manganese. These metals were above the RSLs for tap water in four to seven groundwater samples, and therefore were identified as contaminants of potential concern (COPCs) for groundwater.

1.9 FATE AND TRANSPORT

The fate and transport of the COPCs in environmental media are determined by the physical and chemical properties of the chemicals and of the environmental media (e.g., soil, groundwater, surface water, or sediment) into which they are released.

The fate and transport processes of concern for DU 4-1 are those that govern the migration and fate of contaminants in soil, groundwater, surface water, and sediment. The following is a summary of the processes for each medium at DU 4-1. Additional information on these processes is provided in the DGA Report (Tetra Tech, 2011a).

Soil – In general, contaminants can be released to soils directly through spills or discharges at or below the surface. Once the contaminants are in the soil a variety of processes can immobilize, degrade, or mobilize the contaminants to other environmental media. These processes include sorption, volatilization, leaching, and runoff/erosion.

Groundwater – In general, contaminants can be directly released to groundwater from subsurface tanks or drainage structures or may be transported into groundwater from other media. Once the contaminants are in the groundwater, the contaminants exist in either the dissolved phase or the suspended solid phase and a variety of processes can occur that affect the transport and transformation of the contaminants within these phases. These processes include advection, mechanical dispersion, molecular diffusion, sorption, biological degradation, and abiotic degradation.

Surface Water and Sediment – In general, contaminants can be released to surface water and sediment in the same fashion as contaminants are released to soil and groundwater. Once the contaminants are in the surface water and sediments a variety of processes can either immobilize, degrade, or mobilize these

contaminants. These processes include advection, mechanical dispersion, molecular diffusion, biological and abiotic degradation, and sorption.

Fate and Transport Characteristics of Site Contaminants

Arsenic and chromium were the only metals detected in surface soils at concentrations exceeding Residential and Industrial RSLs, while arsenic, chromium, cobalt, iron, and manganese were all detected above Residential RSLs in subsurface soil samples.

When subjected to precipitation infiltration, soluble metals can be leached from the soils and conveyed into the underlying groundwater. Soluble metals may also be leached from the soils into groundwater through the seasonal rise and fall of the water table. This is a natural process by which minerals are provided to the groundwater. In addition, metals that are naturally present in the soil may be liberated by reducing conditions created by biological degradation of petroleum released to the soil. These metals, although present at concentrations within federal drinking water standards, appear to be slightly elevated in groundwater samples collected at the Site. Arsenic, cobalt, iron, and manganese were detected in groundwater at concentrations exceeding the EPA tap water RSLs, and manganese was detected at concentrations above the health advisory, which is EPA guidance for developing risk-based standards for drinking water contaminants that do not have promulgated standards within either federal or state drinking water regulations. None of the contaminants identified in Site groundwater exceed EPA Maximum Contaminant Levels (MCLs), nonzero Maximum Contaminant Level Goals (MCLGs), or more stringent state groundwater standards.

As groundwater migrates, some of the metals will undergo transformation processes that result in their return to an insoluble state. Reduction-oxidation, precipitation, and adsorption reactions can cause the dissolved phase ions to leave the aqueous phase. However, some of these metals will continue to migrate with groundwater. As dissolved metals are discharged to the surface in either a wetland or marine environment, some of the metals will likely be adsorbed and removed from the aqueous phase because of interactions with organic materials, sulfides, or oxyhydroxides. This is a part of a natural filtration process that is commonly seen in wetland sediments. Sediments at the Site were observed to contain these metals, suggesting such transport and or natural filtration processes could have occurred at the Site.

Once in surface water, dissolved metals will migrate with water flow. Some of the metals will undergo transformation processes that result in their return to an insoluble state. Reduction-oxidation, precipitation, and adsorption reactions can cause the dissolved phase ions to leave the aqueous phase.

Undissolved metals are likely to be adsorbed and removed through physical interactions with organic materials, sulfides, or oxyhydroxides, bind with the sediment, and settle out of the water column.

For this Site, the transport flow path would be that metals would leach from soil to groundwater and then to sediment in the wetland, and to surface water in the brook. While it is acknowledged that metals are present in these media, the metals concentrations measured in soil, groundwater, sediment and surface water are all relatively low. Regardless, because they exceed risk screening criteria, risks were quantified for each of these media, as described in Sections 1.10 and 1.11 below.

1.10 HUMAN HEALTH RISK ASSESSMENT

This section summarizes conclusions of the baseline HHRA which was presented in the DGA Report (Tetra Tech, 2011a). The objective of the HHRA is to determine whether detected concentrations of chemicals at the Site pose a significant threat to potential human receptors under current and/or future land use. The potential risks to human receptors are estimated based on the assumption that no actions are taken to control contaminant releases.

Work was conducted in accordance with guidance and reports published by the Navy, the EPA, and the State of Rhode Island.

The HHRA is structured and reported according to the guidelines of the Risk Assessment Guidance for Superfund (RAGS), Human Health Evaluation Manual, Part D: Standardized Planning, Reporting, and Review of Superfund Risk Assessments (RAGS Part D) (USEPA, 2001). The assessment follows the methodology presented in the approved Technical Memorandum for Data Summary and Plan for Risk Assessment and the approved Sampling and Analysis Plan (SAP) (Tetra Tech, 2008b, Tetra Tech, 2010).

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

Potential receptors evaluated for this assessment included likely human receptors under current and potential future land use. Potential receptors under current land use are industrial workers, adolescent trespassers, and recreational users under local restrictions. The current restricted recreational use is limited to bow hunting for deer during the legal Rhode Island deer season. This activity is allowed only

through permit to local Navy employees. The Site is within the boundaries of an active and access-restricted Federal facility. The site is further restricted to casual recreational users by locked gates, partial fencing, and signage designed to dissuade trespassers from accessing the site. The LUC to prevent unrestricted recreational use would have to be retained by the new owner should the property be sold by the Navy in the future.

Potential receptors evaluated in the HHRA for future land use are construction workers and hypothetical child and adult residents. At this time, future land use is anticipated to be the same as current land use; however, the planned use of land can change. Therefore, potential future residential receptors were evaluated in the baseline HHRA, primarily for decision-making and planning purposes.

At the Site, PAHs, dioxins/furans, and metals were identified as COPCs in soil. Naphthalene and metals were identified as COPCs in groundwater. PAHs, and metals were identified as COPCs in surface water and PAHs, dioxins/furans, and metals were identified as COPCs in sediment.

Exposures evaluated in the HHRA were based upon the reasonable maximum exposure (RME), which is defined as “the maximum exposure that is reasonably expected to occur at a site” (USEPA, 1989b). In addition, the central tendency exposure (CTE) which addresses an average case was also evaluated in the HHRA for the Site (USEPA, 1992).

Quantitative estimates of non-carcinogenic and carcinogenic risks [hazard index (HIs) and incremental lifetime cancer risks (ILCRs), respectively] were developed for potential human receptors. All receptors were evaluated for exposures to surface soil (0 to 1 foot bgs) and all soil (0 to 10 feet bgs). Construction workers and hypothetical residents were also evaluated for exposures to groundwater. Adolescent trespassers and unrestricted recreational users were also evaluated for exposures to surface water and sediment. The groundwater, surface water, and sediment at the Site were evaluated as single exposure units (EUs).

In evaluating the results of the quantitative estimates of HIs and ILCRs the following were used:

- 1) The EPA defines the range of 1×10^{-4} to 1×10^{-6} as the ILCR target range for hazardous waste facilities addressed under CERCLA. Individual or cumulative ILCRs greater than 1×10^{-4} are generally considered “unacceptable” by EPA. Risk management decisions are necessary when the ILCR is between 1×10^{-4} and 1×10^{-6} . EPA typically does not require remediation when the cumulative ILCR is less than 1×10^{-6} . The RIDEM acceptable risk threshold, under State regulations, is 1×10^{-6} for individual contaminants and 1×10^{-5} for cumulative exposure.

- 2) An HI exceeding unity (1.0) indicates that there may be non-carcinogenic health risks associated with exposure. If an HI exceeds unity, target organ effects associated with exposure are considered. Only those hazard quotients (HQs) for chemicals that affect the same target organ or exhibit similar critical effect(s) are regarded as additive. Therefore, it may be possible for the cumulative HI to exceed unity, but no adverse health effects are anticipated if the COPCs don't affect the same target organ or exhibit the same effect.

The results of the HHRA are summarized below.

Soil Risks

HIs for all receptors exposed to site-related COPCs in surface and subsurface soil under the RME scenario were less than or equal to unity (1), with the exception of construction workers exposed to a combination of surface and subsurface soil. Manganese in soil samples collected near Ruin 1 was the major contributor to the HI for construction workers. Most risk attributable to soil is derived from samples collected at one location SB934, where concentrations of PAHs were high (greater than 10,000 µg/kg). This location is at a former discharge point from the former burn chamber/OWS, and is considered a hot spot for PAHs. The other major contributor to the ILCR for the industrial and residential receptors is arsenic (RME only). Comparisons of site concentrations to background concentrations indicate that these levels of arsenic are at least partially attributable to a background condition (Tetra Tech, 2011a). ILCRs for CTE risk are below the RIDEM target value of 10⁻⁵.

ILCRs for the following receptors exceed EPA's target risk range of 10⁻⁴ to 10⁻⁶ under RME risk.

Area	Medium	RME ILCR Exceeds EPA's Target Risk Range of 10 ⁻⁴ to 10 ⁻⁶	RME ILCR Exceeds RIDEM's Target Cumulative Risk Level of 10 ⁻⁵
Tank Farm 4	Surface Soil	Hypothetical Child Residents Hypothetical Lifelong Residents Lifelong Recreational Users	Industrial Workers Adolescent Trespassers Child Recreational Users Adult Recreational Users Lifelong Recreational Users Hypothetical Child Residents Hypothetical Adult Residents Hypothetical Lifelong Residents
	All Soil	Hypothetical Child Residents Hypothetical Lifelong Residents	Industrial Workers Child Recreational Users Lifelong Recreational Users Hypothetical Child Residents Hypothetical Adult Residents Hypothetical Lifelong Residents

Carcinogenic PAHs and arsenic were the major contributors to the ILCRs for receptor exposure to COPCs in the surface soil and all soil datasets at the Site. As an example, under an RME scenario, arsenic poses an ILCR risk of 1×10^{-5} for the industrial worker, and the PAHs pose an ILCR risk of approximately 1.2×10^{-5} . There is significant uncertainty as to the source of arsenic in soil, and prior documentation suggests a background source, based partially on soil type. Soil types within the decision unit are identified as UD, indicating soils have been reworked in place. Tetra Tech conducted an evaluation of U.S. Soil Conservation Service (USCS) maps of the area available prior to the construction of the tank farm, and determined that soils at DU 4-1 consisted of two types: NeB, and Se. The DGA Report presents a comparison of arsenic to both. It was found that the arsenic concentrations at the Site are within the background concentrations of one of the soil types represented, and above the background concentrations of the other. Soil types mapped for the area prior to the development of the Site as a Tank Farm are provided as Appendix A-6 of this report.

Risk management is further discussed in Section 2.

In the risk assessment presented in the DGA Report, compounds retained as COCs in surface soil were carcinogenic PAHs and arsenic. Compounds retained as COCs in the all soil category were carcinogenic PAHs, arsenic and manganese.

Groundwater Risks

HIs exceed unity (1) for child residents and adult residents using the groundwater at Tank Farm 4 for residential use. For future child residents under the ingestion exposure route, the major contributors to the HI were arsenic, cobalt, iron, and manganese. Under the dermal contact exposure route, manganese was the major contributor to the HI for future child residents.

For future adult residents, manganese was the major contributor to the HI, under the ingestion exposure route.

The ILCR exceeds the EPA target risk range for lifelong residents under a residential use of groundwater. Arsenic was the major contributor to the ILCR.

The chemicals retained as COCs for groundwater at the Site were therefore arsenic, cobalt, iron, and manganese.

Surface Water Risks

HIs for adolescent trespassers and recreational users exposed to surface water at the Site were less than unity (1). At the Site, ILCRs for adolescent trespassers and recreational users exposed to surface water were less than or equal to the lower bound of EPA's target risk range. Therefore, there were no COCs identified for surface water at the Site.

Sediment Risks

HIs for adolescent trespassers and recreational users exposed to sediments were less than unity (1). ILCRs for adolescent trespassers and recreational users exposed to sediment at Tank Farm 4 were within EPA's target risk range. Therefore, there were no COCs identified for sediment at the Site.

1.11 ECOLOGICAL RISK ASSESSMENT

This section summarizes conclusions of the DU 4-1 ERA presented in the DGA Report (Tetra Tech, 2011a). The ERA was performed to assess ecological risks to the terrestrial and aquatic receptors exposed to contaminants at the Site. Current surface soil, sediment, and surface water data were evaluated.

The goal of the ERA conducted at DU 4-1 was to evaluate the potential for adverse ecological impacts of site-related contamination and to determine the need for further investigation and/or remedial action at the Site. The ERA provided in the DGA Report contains information to enable scientists and managers to conclude either that ecological risks at the Site are most likely negligible or that further information is necessary to evaluate potential ecological risks at the Site.

The ERA methodology is in accordance with the Uniform Federal Policy (UFP) SAP for Tank Farms 4 and 5 and the following guidance documents (Tetra Tech, 2010):

- Navy Policy for Conducting Ecological Risk Assessment (Navy, 1999).
- Final Guidelines for Ecological Risk Assessment (USEPA, 1998).
- Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (USEPA, 1997).

The ERA consists of Steps 1, 2, and 3a of the eight steps required by the above guidance documents. The first two steps consist of the screening-level ERA. Step 3a is the first step of the baseline ecological risk assessment (BERA) and consists of refining the conservative exposure assumptions to ultimately refine the list of COPCs that are initially selected during Step 2. Steps 3b through 7 consist of additional

Site-specific investigations/biological studies. Steps 3b through 7 are conducted only if additional evaluations or investigations, such as toxicity testing are necessary. Aspects of Step 8, risk management, are addressed throughout the ERA process, in cooperation with Region 1 regulators.

Several chemicals were initially selected as COPCs as a result of the initial screening of surface soil. These chemicals were further evaluated as a part of the Step 3a refinement, the first step of the ERA. After a review of alternate toxicity information for the initial COPCs was conducted, COPC concentrations were compared to the alternate toxicity information. COPCs are further discussed in the text below.

The following PAHs were retained as candidate COPCs for soil invertebrates at DU 4-1 because the maximum detected concentrations exceed screening levels: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, and pyrene. It is important to note that all of these maximum concentrations occurred at a single sample location, TF4-SB-934-0001, at the former terminus of the straight discharge pipe, just east of the area that was previously remediated (Figures 1-4 and 1-5). The closest samples to the north, east, and south are approximately 150 to 200 feet away, and these samples do not contain elevated levels of these COPCs; however, the exact horizontal extent of elevated concentrations of these compounds within the boundary of the clean samples beyond is not known.

Several metals were initially selected as candidate COPCs for soil because their concentrations exceed conservative plant screening levels. All of these metals were subsequently eliminated as COPCs for one or more of the following reasons: 1) based on the soil pH, the metals were unlikely to be bioavailable; 2) metals were detected at concentrations that exceeded background concentrations based on the EPA-approved Basewide Background Study (Tetra Tech, 2008a). They do not appear to be related to Site activities based on their concentrations and distribution across the Site; and 3) the Site is heavily vegetated, so significant impacts to plants are not actually evident. Therefore, it was determined that potential risks the metals may pose to plants did not merit further evaluation.

Manganese was initially selected as a COPC in soil because the maximum concentration [818 mg/kg] in Site soil exceeded the Ecological Soil Screening Level (Eco SSL) for soil invertebrates (450 mg/kg). Analysis of several soil samples indicated the presence of manganese at concentrations that exceeded the Eco SSL; the 95% upper confidence limit (UCL) for manganese (453.3 mg/kg) at DU 4-1 is just slightly greater than the Eco SSL. Therefore, impacts to soil invertebrates are expected to be minimal, and manganese is eliminated as a COPC for soil invertebrates.

No chemicals were retained as COPCs for aquatic organisms.

For risks to mammals and birds, the chemicals initially selected as COPCs were also further evaluated in Step 3a using conservative and less conservative exposure assumptions. Note that even the “less conservative” assumptions are still conservative, because it is still assumed that the organisms will obtain all of their food from the Site, and that the chemicals are in the same bioavailable forms as they were in the test used to develop Threshold Reference Values (TRVs).

Findings show that risks are possible to insectivorous receptors from benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene, which are retained as candidate COPCs in DU 4-1 surface soils at the hot spot location described above (TF4-SB-934-0001). The highly elevated detections at this single location biased the 95% UCL so that the ecological effects quotients (EEQs) based on the no observed adverse effect level (NOAEL) are greater than 1.0. None of the lowest observed adverse effect level (LOAEL) EEQs for these chemicals and receptors are greater than 1.0, indicating that there is greater uncertainty in whether mammals and birds are being negatively impacted, because doses above a no-effects level do not necessarily indicate that impacts will occur. Although doses greater than a lowest-effects level also do not necessarily indicate that impacts will occur, there is a greater likelihood that they will occur, compared to doses exceeding only a no-effects level. Based on this assessment, no chemicals were retained as candidate COPCs for ecological risk at the Site.

2.0 DEVELOPMENT OF REMEDIAL ACTION OBJECTIVES

The purpose of this section is to present pertinent information that will be used in this FS for the development and evaluation of remedial alternatives. Specific goals of this section are as follows:

- Section 2.1 identifies federal and state ARARs with which the remedial alternatives must comply.
- Section 2.2 develops PRGs that will be used to select media of concern and to determine areas requiring remedial actions.
- Section 2.3 discusses RAOs that will guide the development of remedial alternatives.
- Section 2.4 compares Site sampling data to PRGs and define the area(s) of non-attainment to be addressed by the remedial alternatives.

2.1 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

In recognition of the unique characteristics and circumstances associated with the remediation of individual sites, SARA and the NCP provide specific standards for the determination of whether a particular remedy provides sufficient clean-up at a given site. The NCP (40 Code of Federal Regulations [CFR] Part 300) specifies procedures to be employed in identifying, removing, or remedying releases of hazardous substances. In particular, the NCP specifies procedures for deciding the appropriate type and extent of remedial action at the Site to effectively mitigate and minimize the threat to, and provide adequate protection of, human health, welfare, and the environment.

The goal of remedy selection is to protect human health and the environment, to maintain the protection over time, and to minimize untreated waste (40 CFR 300.430 of the NCP [55 FR 8846]). The remedial alternative must attain ARARs under federal environmental laws and more stringent state environmental and facility siting laws, or provide grounds for invoking one of the waivers permitted under the statute.

2.1.1 Definition of Applicable or Relevant and Appropriate Requirements

USEPA defines “applicable” and “relevant and appropriate” in the revised NCP, codified in 40 CFR 300.5 (1994), and has incorporated these definitions in its *CERCLA Compliance with Other Laws Manual* (Interim Final–EPA/540/G-89/006, Part II–EPA/540/G-89/009) (USEPA, 1988b). Site remediation must comply with ARARs, except where a waiver is granted according to Section 121(d) of CERCLA.

A requirement under CERCLA/SARA, as amended, may be either “applicable” or “relevant and appropriate” to a site-specific remedial action, but not both.

- **Applicable Requirements** – These clean-up standards are standards of control, and other substantive federal environmental and state environmental and facility siting requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a site.
- **Relevant and Appropriate Requirements** – These clean-up standards are standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law. Although not directly “applicable” to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a site, these requirements address problems or situations sufficiently similar to those encountered at a site that their use is well-suited to the particular site. In some circumstances, a requirement may be relevant, but not appropriate, for the Site-specific situation.

2.1.2 Classifications of Applicable or Relevant and Appropriate Requirements

ARARs for remedial action alternatives can be classified into one of the following three functional groups:

1. **Chemical-Specific** – Health- or risk-based numerical values or methodologies that establish clean-up levels for particular contaminants.
2. **Location-Specific** – Requirements that restrict remedial actions based on the characteristics of the Site or its immediate environs.
3. **Action-Specific** – Requirements that set controls or restrictions on the design, implementation, and performance levels (including discharge limits) of activities related to the management of hazardous substances, pollutants, or contaminants.

2.1.3 To-Be-Considered Guidance

Federal and state guidance and policy documents, advisories, and other criteria that do not have the status of ARARs and are not enforceable are identified as To-Be-Considered (TBC) guidance. Such guidance documents may be considered when developing remedies that will be protective of human health and the environment.

2.1.4 Identification of Applicable or Relevant and Appropriate Requirements

The following sections summarize the specific federal and state ARARs for remedial actions that may be conducted at the Site, and for the types of technologies that will be developed into remedial alternatives.

Each ARAR has been chosen for its potential applicability or relevance and appropriateness in accordance with the procedures identified in the *CERCLA Compliance with Other Laws Manual* (Office of Solid Waste and Emergency Response Directive 9234.1-01) and *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (Office of Solid Waste and Emergency Response Directive 9355.3-01) (USEPA, 1988a and 1988b).

2.1.4.1 Chemical-Specific Applicable or Relevant and Appropriate Requirements

Chemical-specific requirements are established using health- or risk-based numerical values or methodologies that establish cleanup levels in environmental media for specific substances or pollutants. In general, chemical-specific requirements are set for a single chemical or a closely related group of chemicals (including setting risk-based cleanup levels). These requirements do not consider the mixture of chemicals. Chemical-specific ARARs are discussed below for soil and groundwater, which were the environmental media for which risks were identified in the risk assessment presented in the DGA Report (Tetra Tech, 2011a). Chemical-specific ARARs identified for the Site are also summarized in Table 2-1.

Soil

Currently, there are no promulgated federal ARARs that are chemical-specific for the Site that would provide limits for the COCs detected in Site soil.

The State of Rhode Island does have chemical-specific criteria in the RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, DEM-DSR-01-93, more commonly known by its short title, Remediation Regulations (RIDEM, 2011). The soil objectives are comprised of two components: DEC and Leachability Criteria. Separate DEC are established for both residential and industrial/commercial land uses. Residential DEC apply for vadose zone soil in areas where residential and unrestricted recreational use is likely. Industrial DEC apply to the top two feet of soil in areas where there are controls in place to prevent residential or unrestricted recreational use, such as an Environmental Land Use Restriction (ELUR) or Land Use Control (LUC). Leachability criteria apply to all soil, regardless of depth, based on state's classification of underlying groundwater.

In addition to the use of these criteria, site-specific risk-based cleanup goals for soil were calculated based on slope factors and reference doses in accordance with USEPA risk guidance.

Groundwater

Federal MCLs, non-zero MCLGs, and more stringent State groundwater criteria have been identified as chemical-specific ARARs for groundwater. Groundwater at Tank Farm 4 is classified as GA/NA under RIDEM regulations; although this classification does exist, the EPA does not recognize this, and therefore federal standards apply except where more stringent state criteria exist. The federal drinking water standards require that the aquifer at the site be restored to its beneficial use wherever practicable within a time frame that is reasonable given the circumstances of the site. It should be noted that the groundwater at the Site currently meets the federal standards noted above, although manganese in the groundwater exceeds the EPA health advisory which is identified as To Be Considered EPA guidance, described in Section 2.1.4.4, below.

2.1.4.2 Location-Specific Applicable or Relevant and Appropriate Requirements

Location-specific ARARs are restrictions placed on the concentrations of hazardous substances permitted, or on the conduct of certain activities, based on characteristics to do solely with the location itself. The general types of location-specific requirements that may be applied to the Site include wetland and floodplain regulations. Potential location-specific ARARs for the Site are presented in Table 2-2. The manners in which these ARARs actually apply to the alternatives presented later in this FS are presented in sections 4 and 5 of this report.

2.1.4.3 Action-Specific Applicable or Relevant and Appropriate Requirements

Action-specific ARARs are usually technology or activity-based requirements or limitations for actions taken, with respect to managing hazardous substances, pollutants, or contaminants. These requirements generally focus on actions taken to remediate, handle, treat, transport, or dispose of hazardous substances, pollutants, or contaminants. Action-specific requirements may determine how a selected remedial alternative must be implemented. However, action-specific ARARs can be unique to a particular remedial alternative being evaluated. In later sections of the FS, one or more of these ARARs may be included for selected applicable alternatives, but not for all alternatives under evaluation. Potential action-specific ARARs for the Site are listed in Table 2-3. The manners in which these ARARs actually apply to the alternatives presented later in this FS are presented in sections 4 and 5 of this report.

2.1.4.4 To-Be-Considered Guidance

TBC guidance documents or advisories from federal and state agencies do not have the status of ARARs and are not enforceable. However, TBC guidance can be used to support the development and

evaluation of remedial actions for a CERCLA site. Potential ARAR and TBC guidance for the Site are presented in Tables 2-1 through 2-3. The manners in which these ARARs actually apply to the alternatives presented later in this FS are presented in sections 4 and 5 of this report.

2.2 DEVELOPMENT OF PRELIMINARY REMEDIATION GOALS (PRGs)

In this section, PRGs are identified and selected as applicable to this Site. PRGs are selected for a COC identified by the human health or ecological risk assessment using the following steps.

Human health risk-based PRGs are developed by calculation of an acceptable risk using a back calculation from the risk assessments published in the DGA Report (Tetra Tech, 2011a). Risk-based PRGs are developed for each medium and for each compound identified as a COC in that report.

Ecological risk based PRGs are typically derived by determining concentrations of COCs predicted to provide a toxic effect, typically through toxicity testing as part of a Baseline Ecological Risk Assessment (BERA). At this Site, the screening level ERA (steps 1-3a of the 8 step ecological risk assessment guidelines) did not identify potential risks to a level that would merit conducting a BERA, and as such, no COCs are identified for protection of ecological receptors.

PRGs are also derived through identification of applicable and relevant and appropriate regulatory criteria for each media (chemical-specific ARARs). For instance, MCLs are applicable criteria for groundwater at this Site and therefore can be selected as PRGs. In accordance with agreements between RIDEM, USEPA and the Navy, the RIDEM DEC in soil are identified as ARARs, and PRGs are set using these values for COCs that either do or do not pose risk as identified in the Data Gaps Assessment Report (Tetra Tech, 2011a).

Finally, PRGs are adjusted so that they do not exceed applicable background conditions. This provides assurance that a remedial action goal is not established that is in excess of the natural condition, should the releases not have occurred on the Site. Other risk management evaluations are also considered as appropriate to assure a PRG is not selected that either cannot be achieved, or is not appropriate for the Site and its conditions.

PRGs are developed as described below for each media of concern. The full development of values selected is presented as Appendix B-1. The COCs that exceed PRGs are selected as described in the following subsections. These PRGs remain “preliminary” through the planning stages and risk management steps until the Record of Decision is finalized, at which time they become Remediation Goals (RGs), thus the RAO for the ROD will be to achieve “RGs”, not “PRGs”.

2.2.1 Identification of Media of Concern

The media of concern were identified based on the results of the HHRA and screening level ERA conducted during the DGA Report (Tetra Tech, 2011a). Soil and groundwater were identified as media of concern to be addressed by the remedial alternatives described later in this report as summarized below.

- Soil, both surface soil (0-1 foot below ground surface) and “all soil” (soil to a depth of 10 feet below ground surface), was identified as media of concern based on the HHRA. The scenarios associated with risk estimates above target levels include the residential exposures (adult, child, and lifelong residents), lifelong unrestricted recreational exposure, and construction worker exposure.
- Groundwater was identified as a media of concern based on the HHRA. The scenarios associated with unacceptable risks include the future residential use of the Site groundwater for adult, child and lifelong residents.

2.2.2 Derivation of Human Health Risk-Based Preliminary Remediation Goals

The DGA Report determined which of those chemicals that were detected onsite pose unacceptable risks to human health (Tetra Tech, 2011a). These chemicals were identified as COCs for human receptors in Section 1.10 of this report. Human health risk-based PRGs were developed for those COCs and are presented in the following sections.

These PRGs are proposed clean-up levels that are based on human health risks, and are intended to be protective of human health. PRGs were derived for the COCs identified in site soil and groundwater. The methodology used to derive PRGs for each medium of concern is described below.

PRGs are defined for all media of concern and all exposure scenarios with unacceptable risks, for both current and future land use scenarios. Although the Site is not currently residential and there are no plans for residential use of the property in the future, PRGs for residential exposures to soil and groundwater are calculated and presented. PRGs for construction workers exposure to soil are also calculated and presented. PRGs were not calculated specifically for unrestricted recreational use, because residential, industrial/commercial, and construction PRGs were calculated: restricted recreational use (permit-based

hunting) is similar to industrial/commercial use, and unrestricted recreational use would be addressed by the residential use PRG.

Soil PRGs

Potential soil PRGs were calculated using several different threshold values for human cancer and non-cancer risks, to provide risk managers with a wider range of options for reducing human health risks at the Site: these risk threshold values were 1×10^{-6} , 1×10^{-5} , and 1×10^{-4} (cancer risk) and a maximum HQ of 1.0 (non-cancer risk). These PRGs were calculated for RME risk for soil COCs identified in Section 1.10, for future hypothetical residents and for construction workers.

As presented in the DGA Report, RME soil exposures for future on-site residents resulted in total cancer risks from soil exceeding 1×10^{-4} , with risks greater than 1×10^{-6} for the chemicals arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. PRGs applicable to the COCs for residential soil, as listed above, were then calculated using the assumptions previously developed for residential exposure to Site soil under RME scenarios.

For construction worker exposure to site soil, the RME HI for manganese is greater than 1. PRGs applicable to manganese for industrial use of site soil were then calculated, using the assumptions previously developed for industrial/commercial exposure to site soil under RME scenarios.

The PRGs calculated for the future residential site use scenario are protective of human health under future unrestricted use of the Site. The PRGs calculated for the industrial/commercial site use scenario are protective of human health for a site use that is limited to on-site workers, excavation workers, and restricted recreational use, which is consistent with the current and expected future land use.

The human health risk-based PRGs for soil COCs were derived using the equations presented in Appendix B-1. Table 2-4 summarizes these risk-based PRGs for various human receptors. Cancer risk thresholds of 1×10^{-6} and non-cancer HQs of 1.0 were used to develop the human health risk-based PRGs for individual COCs in soil. For those COCs with both cancer- and non-cancer-risk-based PRGs, the lower of the two values was compared to the ARAR – based PRGs, and the lower of these candidate PRGs are compared to a background value, if available for that compound. The lower of the candidate PRGs adjusted for background is selected as the final PRG for the appropriate land use on the far right columns of Table 2-4.

The soil boring locations with chemicals exceeding these selected soil PRGs are identified on Figure 2-1 (residential) and 2-2 (industrial). Locations where soil samples exceeded residential PRGs are shown in

Figures 2-3 and 2-5(arsenic); Figures 2-7 and 2-9 (manganese); and 2-11 and 2-13 (PAHs). Locations where soil samples exceeded the industrial/commercial PRGs are shown in Figures 2-4 and 2-6 (arsenic); Figure 2-10 (manganese), and Figure 2-12 (PAHs). No industrial exceedances were noted for manganese in surface soil (Figure 2-8) and no industrial exceedances were noted for PAHs in subsurface soil (Figure 2-14) Surface soil and subsurface soil PRGs are presented separately in the figures noted, respectively. Contaminant concentrations are compared to soil PRGs in Table 2-5.

Groundwater PRGs

Potential groundwater PRGs were calculated using several different threshold values for human cancer and non-cancer risks, to provide risk managers with a wider range of options for reducing human health risks at the Site: these risk threshold values were 1×10^{-6} , 1×10^{-5} , and 1×10^{-4} (cancer risk) and an HQ of 1.0 (non-cancer risk). These PRGs were calculated for COCs identified for groundwater in Section 1.10 under a residential drinking water scenario. Groundwater at the Site is classified as potable under federal drinking water standards. A drinking water use scenario was evaluated in the DGA Report and human health risk-based PRGs were developed for a residential scenario.

The risk assessment for the Site indicates that cancer risks exceeded USEPA's target risk range of 1×10^{-4} to 1×10^{-6} and RIDEM's benchmark of 1×10^{-5} , with risks greater than 1×10^{-6} for arsenic; non-cancer hazard quotients exceeded 1.0 for arsenic, cobalt, iron, and manganese under the residential use scenario. The COCs for groundwater identified in Section 1.10.4 (endrin aldehyde, arsenic, cobalt, iron, and manganese) were carried forward into the PRG development process. As noted in Section 1.8, endrin aldehyde, was confirmed to be a laboratory cross-contaminant and not a site contributor to risk.

Under the exposure scenario of groundwater as a drinking water source, human health risk-based PRGs were derived for groundwater COCs using the equations presented in Appendix B-1. These PRGs were selected based on the 1×10^{-6} cancer risk level and/or an HQ of 1.0. For COCs with both cancer-based and non-cancer-based (RME and CTE) PRGs, the lower of the two values was selected as the human health risk-based PRG. Table 2-6 presents the selected risk-based PRGs for groundwater under the drinking water exposure scenario. Although arsenic contributed to risk from groundwater, a PRG was not selected because site concentrations were below the EPA MCL.

Monitoring well locations where a PRG was exceeded in groundwater are shown in Figure 2-15. Groundwater exceedances of individual contaminants are shown in Figure 2-16 (cobalt), Figure 2-17 (iron), and Figure 2-18 (manganese). Contaminant concentrations in groundwater are compared to PRGs in Table 2-7.

Summary of Human Health Risk-Based PRGs

Selected PRGs were based on a risk of 1×10^{-6} for carcinogens and an HQ of 1.0 for non-carcinogens. For those COCs with both types of risk, the more conservative of the two values was chosen. For each COC, the protectiveness of the associated potential PRG was evaluated; the lower of the values representing a 10^{-6} cancer risk level and an HQ of 1.0 was selected as the human health risk-based PRG. For all of the COCs, cancer-risk-based PRGs are less than non-cancer (hazard-quotient-based) PRGs, and there are fewer than ten COCs for each scenario.

This approach ensures that the aggregate cancer risk from all COCs combined will not exceed 1×10^{-5} . Because there were so few risk-based COCs for this site, the noncancer threshold was set at 1, and the HQs were checked manually to assure that the total HI for each target organ was less than 1.0. Therefore, the selected human health risk-based PRGs represent values protective of both cancer and non-cancer risks. Further discussion of the estimated protectiveness of the recommended PRGs is presented in Section 2.3.

2.2.3 Applicable or Relevant and Appropriate Requirements and To-Be-Considered Guidance for Preliminary Remediation Goals

This section describes the evaluation of ARARs to identify or support selection of PRGs. As discussed in Section 2.1, there are no federal promulgated ARARs that are chemical-specific for soil at the Site. For groundwater at the Site, Federal MCLs, non-zero MCLGs, and more stringent State groundwater standards have been identified as chemical-specific ARARs.

The State of Rhode Island has chemical-specific soil criteria specified under the RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, DEM-DSR-01-93, more commonly known as the Remediation Regulations (RIDEM 2011). The Remediation Regulations provide the methodology for determining remedial action objectives for soil, and provide soil criteria in two categories: DEC and Leachability Criteria. Leachability Criteria are applied at this Site based on federal classification of groundwater. Currently, industrial use is expected to be the most likely future land use for this Site. However, in order to provide ARAR-based PRGs for alternatives both with and without land use restrictions, both residential and industrial DEC are considered.

Many of the chemicals detected at this Site have Method 1 Objectives, as listed in the RIDEM regulation tables (DECs). These criteria are compared to maximum concentrations in vadose zone soil samples from the Site. Contaminants exceeding the RIDEM criteria are identified as RIDEM-based residential and/or industrial soil COCs.

Background Concentrations

Background conditions are not ARARs but are used to adjust PRGs, if appropriate. Metals are naturally-occurring in soil and water. Their concentrations are variable and are largely determined by the material of origin, usually local bedrock, as previously discussed in Section 1. As a result, metals may be present in soils from background areas (not affected by past site activities or releases) at concentrations that are naturally higher than risk-based PRGs or RIDEM Remediation Standards. Background concentrations may set the PRG for inorganic compounds if approved background concentrations are established for the site, based on USEPA guidance.

The Navy conducted a study to establish background concentrations for metals in soils at NAVSTA Newport properties. Soil sampling was conducted in two separate phases due to access issues. In September 2006, both surface and subsurface soil samples were collected from unused property south (upgradient) of the NUSC Disposal Area, the transmission vicinity of a transmission line in Portsmouth RI, and the Anchorage and Coddington Cove Housing Areas in Middletown RI. In March 2007, soil samples were collected from Prudence Island. Background soil samples were collected from six different soil types identified in the Soil Survey for Rhode Island (USDA, 1981): Mansfield mucky silt loam (Ma), Merrimack sandy loam (MmA), Newport silt loam (Ne), Pittstown silt loam (Pm), Stissing silt loam (Se), and beach soils (Ba). Soil samples were not collected from the seventh soil type found in the area, Udorthents-Urban land complex (UD), because it is difficult to identify UD areas that would be considered “background”, as UD soils have been disturbed, by definition.

The data analysis and statistical testing performed for the resulting validated soil data were used to determine appropriate background metals values for comparison to Site metals concentrations. The results of this study are presented in the *Basewide Background Study Report* (Tetra Tech, 2008a). The calculated background concentration values (95 percent upper prediction limit [UPL]) for surface and subsurface soils that are believed to be present at Tank Farm 4 are included in Table 2-8.

Soil types within DU 4-1 are currently identified as UD, indicating soils have been reworked in place. Tetra Tech conducted an evaluation of soil surveys of the area available prior to the construction of the tank farm, and determined that soils at DU 4-1 predominantly consisted of two types: NeB and Se (Appendix A6), although these could have been combined with PmB and Mm soils from elsewhere at the tank farm property, given the quantity of earthworks conducted during development (Appendix A1). These comparable background data were used in the development of PRGs, as shown in Appendix B, for comparison as appropriate.

The calculated background value for arsenic in surface soil and subsurface soil at the Site exceeds both the USEPA RSL and RIDEM Direct Exposure Criteria. The selected PRG for arsenic is therefore the

background value (the 95% UPL of the background data for the combined soils as shown in Appendix B2 and Table 2-8 of this report). The calculated background value for manganese in subsurface soil exceeds the calculated HI. The other calculated background values are either below the regulatory criteria or below the calculated risk-based concentration.

There is no similar background study conducted for metals or mineral content in groundwater at the Site and no comparisons are made in this regard.

2.2.4 Risk Management and Proposed Preliminary Remediation Goals

The proposed risk-based PRGs, ARAR-based PRGs, and background concentrations, as well as the selected PRGs and the basis for their selection are presented in Tables 2-4 and 2-6 for soil and groundwater, respectively, and the associated exposures routes. Note that separate PRGs are provided for a presumed future site use of unrestricted (residential), and for a presumed site use that is restricted (industrial/commercial).

Risk management is appropriate for all steps in the remedy selection process. The risk management step associated with PRG selection is conducted to assure that these selected cleanup concentrations calculated through standard formulas are appropriate for the Site conditions. Each of the selected PRGs is evaluated in a risk management step, presented below.

2.2.4.1 Risk Management for Soil

PAHs: A PAH soil hot spot is located at one of the former discharge areas from the former OWS and burn chamber. This hot spot is readily apparent by the data distribution, and further evaluation was done to determine the resulting risk if the hot spot were removed. Appendix B-2 presents risk assessment calculation tables (RAGs Part D Tables) for residential and recreational risk from soil at the Site with the data from the samples collected at the hot spot at SB934 removed from the data set. The resulting risks are summarized in Table 2-9. As shown in Appendix B-2 and Table 2-9, the resulting risks (RME) without the hot spot at SB934 show a maximum ILCR of 4E-5 and a HI of 2 (risk to child resident). The primary contributor to this risk is arsenic in soil from 0 to 10 feet. It is further noted that the HI is a total value, and there is no HI >1 for a target organ group. Therefore, it is concluded that should this hot spot be removed, the Site-wide risk for soil would be decreased to within USEPA's acceptable risk range.

Arsenic: It is noted that while RME risk calculated for residential exposure to arsenic in soil is above the target risk levels, the CTE risk for the child receptor via ingestion, which is the most sensitive for this route and analyte, is below the target risk level for both surface soil (cancer risk of 2.9E-6; HQ of 0.2) and all soil (cancer risk of 3.5E-6; HQ of 0.3) (see the DGA Report, Appendix H2, Table 7.6.CTE [Tetra Tech,

2011a)]. Therefore, if the CTE risk is utilized for determining remedial action, arsenic in soil would not be a COC for the residential receptors.

Manganese: It is noted that while RME risk calculated for construction workers is above the target risk levels, this risk is associated only with the inhalation of soil dust. The CTE risk for this exposure route and analyte is below the target risk level for both surface soil (HQ of 0.2) and all soil (HQ of 0.4), as presented in the DGA Report, Appendix H2, Table 7.2, CTE (Tetra Tech, 2011). Therefore, if the CTE risk is utilized, manganese would not be a COC for the construction worker in determining remedial response actions.

Based on the above, it is concluded that, should the PAH hotspot be removed, and the arsenic and manganese be evaluated from the CTE perspective, the risk from soil at this Site would be below action levels.

2.2.4.2 Risk Management for Groundwater

Arsenic – The calculated risk-based PRG was developed based on the future child residential risk, through the use of groundwater as a residential water source. As such, the risk-based PRG is below the MCL of 10 micrograms per liter ($\mu\text{g/L}$). Arsenic levels at the Site do not exceed MCLs, non-zero MCLGs, or more stringent state groundwater standards. Therefore, an active remediation to address arsenic is not warranted.

Cobalt – CTE risk from cobalt to the child resident via ingestion of potable water is $\text{HQ}=1.4$. CTE risk to the adult resident, similar to what is used for establishing the RSL for groundwater via ingestion of potable water, is $\text{HQ}=0.5$. This information is discussed in Appendix H2 of the DGA Report, Table 7.7 – CTE (Tetra Tech, 2011a, b).

It should also be noted that, cobalt in groundwater is found throughout the Tank Farm 4 Site in DU 4-2 and DU 4-3, ranging from 0.08 to 28 $\mu\text{g/L}$ (Tetra Tech, June 2011b). The concentration of cobalt in groundwater at DU 4-1 ranged from 1.2 to 12.6 $\mu\text{g/L}$, suggesting that cobalt in groundwater may be ubiquitous in the area because a source has not been identified, and is likely a result of naturally occurring cobalt in the bedrock and bedrock-derived soil. Furthermore, typical cobalt concentrations in groundwater in populated areas are cited as between 1 to 10 $\mu\text{g/L}$ by the World Health Organization (WHO, CICAD 69, 2006). Iron oxides are also known to have an affinity for adsorption of cobalt and has cobalt is also sorbed to manganese (CRC Press, 1992), both of which are present at the Site. In addition, cobalt is essential for some plants, especially nitrogen fixing plants (CRC Press, 1992). Therefore, the risk from cobalt in groundwater at the Site should not be used by itself to direct an action at the Site.

Iron – CTE risk from iron to the child resident is $HQ=0.6$ via future potable use of groundwater. RME risk from iron to the child resident is $HQ=2$ via future potable use of groundwater. Risk to the resident, as defined for establishing the RSL for groundwater is $HQ=0.2$. Iron in groundwater samples is likely due to presence of soluble iron salts. Soluble iron salts cause turbidity and there also may be flocculation of iron and manganese salts in water samples that oxidize when brought to the surface in contact with the atmosphere. Most potable water systems are designed to filter out excess iron either due to color or odor, and risk from iron in samples collected at this Site should not be used to direct an action under CERCLA.

Toxicity to iron from ingestion of groundwater is not well documented, as this is an essential nutrient for health. Iron is an essential element and deriving a toxicity factor for iron poses a challenge because it must address systemic effects associated with deficiency in addition to a threshold dose that causes systemic effects. In essence, iron's dose-response curve is "U-shaped." According to the Center for Disease Control and Prevention (CDC, 2005), iron deficiency is one of the most common known forms of nutritional deficiency. In children, iron deficiency causes developmental delays and behavior disturbances. Young children are at great risk of iron deficiency because of rapid growth and increased iron requirements.

Levels of iron in the body are regulated through changes in the amount of iron absorbed by the gastrointestinal mucosa. The absorption of dietary iron is influenced by body stores, by the amount and chemical nature of the iron in ingested food, and by a variety of dietary factors that increase or decrease the availability of iron for absorption. Although iron absorption is regulated, excessive accumulation of iron in the body resulting from chronic ingestion of high levels of iron cannot be prevented by intestinal regulation, and humans do not have a mechanism to increase excretion of absorbed iron in response to elevated body levels (NAS, 1989 and 2001).

The National Academy of Sciences (NAS) has established guidelines for iron intake that account for physiological differences during different life stages. For non-breast-fed infants (0 to 6 months), the daily adequate intake of iron is 0.27 milligrams per day (mg/day). The NAS Dietary Reference Intakes for children are:

- 7 – 12 months – 11 mg/day (1.2 milligrams per kilograms per day [mg/kg/day])
- 1 -3 years – 7 mg/day (0.54 mg/kg/day)
- 4 – 8 years – 10 mg/day (0.45 mg/kg/day)

Over the ages of 0 to 6 months, this results in an average Dietary Reference Intake of approximately 0.6 mg/kg/day, notably higher than the Dietary Reference Intakes for adults. The Dietary Reference Intake for adult men is 0.11 mg/kg/day and for adult non-pregnant females is 0.29 mg/kg/day.

The Institute of Medicine in the NAS recommends daily maximum intakes of iron for children, based on age (NAS, 2001). Children from 7 months through 13 years of age should take no more than 40 mg iron per day. This is referred to as a Tolerable Upper Intake Level. For children greater than 14 years of age and adults, the Tolerable Upper Intake Level is 45 mg iron per day. The adult Tolerable Upper Intake Level is based on the toxicological study that was used to derive the provisional reference dose of 0.7 mg/kg/day (USEPA, 2006). This reference dose was derived using an average body weight of 70 kg. Recognizing that children between the ages of 0 and 6 have a greater need for iron than older children and adults, that their average body weight is 15 kg, and that their Tolerable Upper Intake Level is only slight less than the adult value, it would seem that a theoretical reference dose for a child would be greater than that of an adult. Using the child Tolerable Upper Intake Level of 40 mg/day and an average body weight of 15 kg results in a theoretical child reference dose of 2.7 mg/kg/day (40 mg/day divided by 15 kg) (USEPA, 1989b). The HI calculated in the risk assessment for a child ingesting iron in groundwater is three for the Site.

Adjusting for the knowledge that children require a greater intake rate of iron for development, and that a theoretical child reference dose based on the Tolerable Upper Intake Level is approximately four times greater than the provisional reference dose, the child HI at the Site was estimated to be about 0.5. Therefore, iron would not pose a significant noncarcinogenic risk in groundwater for children at the Site.

Manganese – CTE risk from manganese to the child resident is $HQ=3.0$ via future residential use of groundwater. Risk to the resident, as defined for establishing the RSL for groundwater is $HQ=1.1$, this information is present in Appendix H2 of the DGA report 2011, Table 7.7.CTE. Manganese in groundwater samples is likely due to turbidity of samples, and elevated concentrations in groundwater can probably be attributed to reducing conditions in groundwater.

Overall, PRGs are established for conservative (residential) future use of the Site. Under current use, there are no risk exceedances, and therefore, there are no PRGs established for current use.

2.3 DEVELOPMENT OF REMEDIAL ACTION OBJECTIVES

RAOs consist of medium-specific goals for protecting human health and the environment. The RAOs specify the media and COCs, exposure pathways and receptors, and acceptable contaminant levels or range of levels for each exposure pathway. By specifying both an exposure pathway and target contaminant level(s), the RAOs permit development of a range of alternatives that may achieve protectiveness by reducing exposure to contaminated media or reducing contaminant concentrations. The objectives should be as specific as possible, but not so specific that the range of alternatives that can be developed is unduly limited.

During the development of the investigations at the Site, the CSM was developed. Based on the different removal activities conducted at the Site, the CSM is modified to identify the affected areas, sources of contamination and contaminants themselves that were removed from the Site. The data gaps assessment conducted in 2010 and published in 2011 confirms the existing conditions of the Site and the CSM was revised again. The current CSM is provided in Appendix A.

2.3.1 Remedial Action Objectives for Soil

The findings of the data gaps assessment report were used in developing the RAOs for soil at the Site. As discussed in Section 2.2, the estimated risks associated with ingestion of and dermal contact with vadose zone soils by future residents (due to PAHs and arsenic in soil) and construction workers (due to manganese in soil dust) exceed RIDEM's target cancer risk of 1×10^{-5} . Contaminants in the soil also exceed RIDEM's direct exposure criteria. Therefore, long-term response actions for soil are necessary to protect human health.

Future use of the Site is considered in the formulation of RAOs. The Navy has indicated that the Site should be available for industrial use and restricted recreational use after the remedial action has taken place. Use of LUCs may be utilized to formalize such restrictions if they are necessary for the remedy. LUCs would be enforced in accordance with the FFA, ROD, and the LUC Remedial Design (RD). Recreational use is restricted to bow hunting for deer by permit during the Rhode Island legal deer season. Restricted recreational use does not include the use of the Site as a "recreational facility for public use" as defined in the RIDEM Remediation Regulations Section 3.62. Restricted recreational use is, however, similar to an industrial/commercial use as defined in Section 3.39 of the RIDEM remediation regulations, as it restricts the personnel that can conduct the activity, restricts the time of use, and restricts the activity allowed.

Residential use is not a current or planned future use, however as directed by CERCLA, the FS evaluates remedial action alternatives for protection of all possible receptors. Restricting land use is one possible remedial action that may be evaluated in the sections that follow. Unless an environmental land use restriction is memorialized by a selected alternative in a ROD for this Site, it cannot be assumed that the Navy's land use restriction will remain in perpetuity.

The soil RAO for the protection of human health is:

- Prevent the ingestion of and direct contact with vadose zone soil containing Site contaminants that pose unacceptable risk for residential and other unrestricted uses.
- Prevent exposure of construction workers to soils with Site contaminants exceeding PRGs.
- Prevent future migration of soil contaminants either to groundwater or adjacent wetlands/waterways.

2.3.2 Remedial Action Objectives for Groundwater

The findings of the data gaps assessment report as well as criteria from the MCLs and the RIDEM Remediation Regulations were considered in developing the RAOs for groundwater. Risks to persons using the groundwater as a residential water source exceed the target risk levels, and PRGs have been developed for these receptors, even though this is not a planned future use of the property.

The groundwater RAO for protection of human health is:

- Prevent site use of groundwater until groundwater RGs have been achieved.
- Restore groundwater quality to its beneficial use

2.4 ESTIMATION OF AREAS AND VOLUMES

The areas and volumes of soil and groundwater to be considered for remedial actions were estimated based on current data and the PRG exceedances identified in Section 2.3. If no PRGs are exceeded in the 2010 data from the DGA, volumes are not calculated for those associated soils.

2.4.1 Soil

The soil boring locations with chemicals exceeding soil PRGs are identified on Figures 2-1 through 2-14. Based on the assessment provided in Section 2.3 above, it is determined that should the soil at SB934 be addressed, soil risks would be within USEPA's acceptable ranges. However, limiting remedial action to this one area would not address other regulatory-based cleanup goals. The following assessment is provided.

Soil Exceeding Industrial PRGs

Soils at SB934 exceed industrial PRGs for PAHs. The horizontal extent of soils associated with this target area was originally estimated based on the findings of the concentrations at this location, the former outfall location that was previously excavated, and the presence of surrounding samples in which such elevated concentrations were not detected. A horizontal limit of 50 feet by 50 feet and a vertical depth of 4 feet, corresponding to a total of approximately 371 cubic yards (cy) of impacted soil exceeding PAH PRG's were originally estimated in the Draft Final FS. It is recognized that this estimate was biased high in order to approximate worst-case conditions and that the actual limit of soils with site-related COCs exceeding PRGs at this target location is likely more conservative. A supplemental assessment of this target area will be conducted as part of the remedial action to better define the horizontal and vertical extent of soil

exceeding the PRGs for PAHs. It is expected that the supplemental assessment will include a 10-foot step out scenario in each direction from SB934 until industrial PRG exceedances are no longer identified allowing for a refined estimate of soil quantities and associated costs for removal and disposal actions at this target location.

While the average arsenic concentration measured in soils at the Site is less than the background value identified in the Basewide Background Report (Tetra Tech, 2008a), arsenic is present at a concentration of 59.5 mg/kg at location SB943, more than double the next highest arsenic soil concentration at the Site, above the background concentration, and exceeding the threshold value of 43 mg/kg identified in the 2011 RIDEM Remediation Regulations (Section 12.04 C). It is appropriate to address arsenic at this location as a second target area, due to this location-specific condition.

The extent of soils associated with this location (SB943) is estimated based on the elevated arsenic concentration measured in the 0 to 1-foot sample interval at this location. There are few samples bounding this location, and a somewhat arbitrary horizontal limit of 50 feet by 50 feet centering on this location was estimated in the Draft Final FS.. Based on the depths of elevated concentrations of arsenic detected in soils from the SB943 boring location, a depth of two feet was estimated, corresponding to a total of approximately 185 cy of impacted soil. It is recognized that this estimate was biased high in order to approximate worst-case conditions and that the actual limit of soils with site-related COCs exceeding PRGs at this target location is likely more conservative. A supplemental assessment of this target area will be conducted in concurrence with the supplemental assessment of the SB934 target area, as the first step of the remedial action to better define the horizontal and vertical extent of soil exceeding the target values for arsenic. It is expected that the supplemental assessment will include a 10-foot step out scenario in each direction from SB943 until arsenic values are no longer identified above the action level. Data from the supplemental assessment at this target location will allow for a refined estimate of soil quantities and the associated costs for removal and disposal actions.

There are two other potential target areas that were identified by USEPA during the development of this FS. These areas include a reported soil/debris berm near SB930 and former test pits to the northwest of SB924. While these are only suspect areas of contamination at this time (only TPH data are available to indicate that these soils may contain COCs above PRGs), the Site-specific conditions and history of the area indicate that it may be appropriate to sample these areas to be sure they do not also contain COCs at concentrations above PRGs. The soil/debris berm near SB930 and the former test pits to the northwest of SB924 will be evaluated as the first step of the remedial action in order to document environmental quality at these two potential impact areas.

The industrial PRGs for arsenic and manganese are exceeded in subsurface soil. These PRGs are based on RIDEM Industrial/Commercial (I/C) DECs. Based on the above, the area and volume estimate

for soil that needs to be addressed for future industrial use was calculated and estimated at the end of this section.

Soil Exceeding Residential PRGs

Multiple areas are noted that exceed residential PRGs that are based on RIDEM residential direct exposure criteria, risk notwithstanding. These areas of surface and subsurface soil will also need to be addressed through remedial actions. Quantities are estimated below.

Soil Quantities

A total of 556 cy of soil was estimated to be above the industrial PRGs (soil within the target areas identified in the text above). Using a point-comparison of sample data, a total of 81,557 cy of soil with COCs at concentrations exceeding residential PRGs (PAHs, manganese and arsenic) is estimated to be present at the Site. These quantities will be revised accordingly after removals at SB934, SB943, the soil/debris berm near SB930, and the former test pits northwest of SB924.

2.4.2 **Groundwater**

Figures 2-15 through 2-18 present the locations of groundwater monitoring wells where PRGs for residential water use were exceeded in groundwater samples collected in 2010. There is no definable plume of manganese, iron, and cobalt at the Site, and because the overburden groundwater is believed to be hydraulically connected to the bedrock aquifer, groundwater at this Site is evaluated as a single unit. Any remedial action should consider the groundwater at the Site as one contiguous aquifer. The quantity of groundwater with COCs exceeding PRGs is estimated to range between 22 and 43 million gallons. An estimated groundwater volume of 22,319,273 gallons was calculated based on the average saturated thickness across DU 4-1. An estimated groundwater volume of 42,879,070 gallons was calculated based on the maximum saturated thickness across DU 4-1.

3.0 IDENTIFICATION AND SCREENING OF TECHNOLOGIES

This section identifies, discusses, and screens potential remedial technologies and process options, and then conducts further detailed evaluations on those options not eliminated during the screening process. The resulting final retained technologies and process options are then used in the assembly of remedial alternatives for the DU 4-1 media of concern (soil and groundwater) at Site 12 –Tank Farm 4. The NCP alternative evaluation criteria are also presented in this section. The description of the remedial alternatives as assembled for each medium of concern, and a detailed evaluation of these remedial alternatives are provided in Sections 4.0 (soil) and 5.0 (groundwater).

Technology identification and screening are important preliminary steps in developing remedial alternatives. In this phase of the FS, potentially applicable technology types and process options are identified. The technologies and process options are then screened by evaluating each with respect to technical implementability, thereby reducing the number of options for further consideration. The technologies and process options considered implementable are then evaluated in greater detail. Technologies and process options retained through this evaluation are subsequently developed into remedial alternatives.

The steps for completing the identification, screening, and evaluation of technology types and process options are summarized below:

- Develop GRAs for each medium of concern that will satisfy the RAOs.
- Identify and screen representative remedial technologies and process options applicable to each GRA.
- Evaluate and select technologies and process options.
- Develop remedial alternatives from retained technologies and process options.

3.1 GENERAL RESPONSE ACTIONS AND TECHNOLOGY EVALUATION

GRAs describe categories of actions that could be implemented to satisfy the RAOs for each medium of concern at a site. GRAs may include treatment, containment, removal, extraction, disposal, limited action such as institutional controls, or a combination. In developing remedial alternatives, combinations of GRAs may be identified to fully address all RAOs.

GRAs identified as applicable for remediating one or both of the two media, vadose zone soil and groundwater, include the following:

- No Action
- Limited Action
- Containment
- Removal
- Disposal
- Treatment

A description of each GRA is provided below.

No Action – Under the no action option, the affected media is left “as is,” without implementing any remedial technologies. This option does not provide for monitoring or placing access restrictions on contaminated media, although it does include conducting statutorily required reviews of the protectiveness of the remedy at least every five years. Examination of this option is retained throughout the FS process, as required by the NCP. Although this option requires no remedial action, it provides a baseline against which other GRAs can be evaluated.

Limited Action – This GRA includes institutional controls such as LUC’s/access restrictions that may limit use or access to the media to reduce or eliminate risk of exposure of receptors to hazardous materials. Limited action measures may also include physical barriers such as fencing, and/or signage to discourage access to the contaminated media. Typically, LUCs and physical barriers or signage require regular follow-up inspections to verify their continued maintenance until cleanup goals have been reached. A long-term monitoring program to assure compliance and to assess changes in environmental conditions or changes as a result of natural attenuation can be part of this GRA. While institutional controls and physical barriers alone do not reduce the toxicity, mobility, or volume of contaminated media through direct means, naturally occurring processes may reduce contaminant concentrations over an extended period of time. Data generated from long-term monitoring activities would provide information to assist in determining the rate of contaminant concentration reductions through these naturally occurring processes, as well as the potential migration of COCs. Monitoring would also provide information on which to base a decision regarding the need to implement additional remedial actions, should migration be observed.

Containment – Containment technologies reduce potential exposure risks through the application of physical means. Physical barriers help to prevent direct contact with contaminated media and control potential erosion or migration. Barriers may consist of permeable covers or low permeability caps and may be comprised of natural or synthetic materials. Containment also can be used to reduce the movement of the contaminated media by preventing erosion of materials and restricting surface water movement through the contaminated media that may cause contaminant transport and leaching.

Containment in place would likely require establishment of a waste management area under RIDEM regulations, as well as associated monitoring and other remedial components.

Removal – Removal technologies are used to collect contaminated media from their present locations and move them for subsequent disposal. For soil, removal is typically performed by excavation equipment, such as excavators and backhoes. For groundwater, removal would involve pumping to prevent passage of contaminated groundwater to downstream receptors. Removal reduces the volume of contaminated media remaining onsite and allows site conditions to attenuate more rapidly than they would, had the contaminated media removal not occurred.

Disposal – Disposal technologies are combined with removal and/or treatment technologies to develop alternatives to clean up contaminated media at the Site. Depending on the nature of the contaminated media, disposal may include the following options: disposal at an offsite Resource Conservation and Recovery Act (RCRA) Subtitle C/RCRA Subtitle D landfill or treatment, storage, and disposal facility (TSDF); or disposal on land at a designated onsite/on-station location. Disposal in a properly secured and maintained manner reduces the movement of the contaminated media.

Treatment – Treatment technologies can be implemented in-situ or ex-situ. In-situ treatment technologies treat the contaminated media in place by reducing the contaminants' toxicity, mobility, or volume. In-situ treatment technologies are not always combined with other GRAs. Ex-situ treatment technologies treat the contaminated media after that media has been removed from its current location. Ex-situ treatment technologies are combined with removal and often disposal options. Ex-situ processes may further include both on-site and offsite options. Treatment technologies reduce contaminant volume, mobility, and/or toxicity. Treatment options include technology types and process options using thermal, physical, chemical, and/or biological means.

3.2 SCREENING OF TECHNOLOGIES AND REPRESENTATIVE PROCESS OPTIONS

Brief descriptions of preliminary screening, representative process options (RPOs), and the evaluation of technologies and process options that remain after the preliminary screening are presented below.

3.2.1 Preliminary Screening

For the remediation of COCs in DU 4-1 media of concern, a variety of technologies and process options are available for each of the GRAs described in Section 3.1. A range of these technology types and process options was identified and screened to focus on relevancy. Summaries of the identification and preliminary screening of remedial technologies and process options appropriate for soil and groundwater

are provided in Tables 3-1 and 3-2, respectively. Many options were eliminated based on technology screening.

3.2.2 Representative Process Options

USEPA guidance for conducting FSs recommends that one RPO be selected for each GRA to simplify the subsequent development and evaluation of alternatives without limiting flexibility during remedial design (USEPA, 1988a). RPOs are selected from the technologies remaining after preliminary screening based on effectiveness, implementability, and cost. The selected RPOs provide a basis for developing performance specifications during preliminary design. Although specific process options are selected for alternative development and evaluation, these process options are intended to represent the broader range of process options within a general technology type. The specific process for implementation of the remedial action may not be selected until the remedial design phase.

Tables 3-3 and 3-4 identify the soil and groundwater RPOs chosen for further evaluation, respectively.

3.2.3 Evaluation of Technologies and Representative Process Options

Following the preliminary screening of RPOs, the remaining technologies and process options are evaluated in greater detail to determine if they are to be retained for use in developing remedial alternatives. One RPO is selected, if possible, from each technology category to simplify subsequent development and evaluation of alternatives without limiting flexibility during remedy selection or remedial design. The evaluation criteria include effectiveness, implementability, and cost, with a focus on effectiveness. Brief descriptions of the criteria are as follows:

Effectiveness - focuses on the potential ability of a process option to handle the estimated areas or volumes of media; to meet the remedial goals identified in the RAOs; to reduce the potential impacts to human health and the environment during construction and implementation; and to be technically reliable (effectiveness of innovative versus well-proven technologies) with respect to the contaminants and conditions at a site.

Implementability - encompasses both the technical and institutional feasibility of implementing a process. The preliminary screening of technology types and process options was based on an evaluation of technical implementability issues in order to eliminate options that are clearly ineffective or unworkable at a site. The subsequent, more detailed, evaluation places greater emphasis on the institutional aspects of implementability coordination with various regulatory agencies and contractors; the availability of

treatment, storage, and disposal services; and the availability of necessary equipment and skilled workers to provide long-term operation and maintenance (O&M) services, etc.

Cost - plays a limited role in the screening of process options. Options are evaluated based on relative capital and O&M costs (whether the costs are high, medium, or low relative to the other options in the same technology type). At this point in the evaluation, the cost analysis is based on engineering judgment and not on detailed estimates.

3.3 EVALUATION OF TECHNOLOGIES AND REPRESENTATIVE PROCESS OPTIONS FOR SOIL

For the remediation of contaminants in soil, a variety of technologies and process options are available for each of the GRAs described in Section 3.1. A range of these technology types and process options was identified and screened to focus on only the relevant technologies and process options for this Site. A summary of the preliminary screening of identified technologies and process options appropriate for soil is provided in Table 3-1. The evaluation of the remaining technologies and RPOs for soil remediation that were not eliminated in the preliminary screening process is provided in the following subsections.

Only those technologies not eliminated in the initial screening (Table 3-1) or in the detailed evaluation presented in this section are included in Table 3-3 and retained for inclusion in remedial alternatives for soil.

3.3.1 No Action

The “no action” alternative, as required under the NCP, provides a baseline to which remedial technologies and alternatives can be compared. Under this option, no removal or treatment of the contaminated soil would occur.

- **Effectiveness:** The no action alternative would not achieve RAOs because contaminants and associated risks would remain. Human health risks associated with exposure to carcinogenic and non-carcinogenic contaminants in the soil are presumed to remain the same. Long-term protection of groundwater would not be provided; and re-use of the property would be impeded.
- **Implementability:** No implementability considerations are associated with the no action option.
- **Cost:** A nominal cost would be required to address the Site in the facility five-year review.

Conclusion – The no action option is retained as a baseline, as required by the NCP.

3.3.2 Limited Action

The components of limited action for soil that are evaluated in this screening include LUCs, the use of temporary physical barriers such as fencing, the posting of signs, and monitoring.

Land Use Controls/Deed Restrictions/Inspections

LUCs are institutional controls that place restrictions on the use of property based on the presence of a risk to human health or the environment. Typically, LUCs may also include the performance of regular follow-up inspections to verify their continued maintenance until cleanup goals have been reached. On non-federal property, the institutional controls that place restrictions are commonly recorded against property deeds. On federal property, such as NAVSTA Newport, the restrictions may be placed on the NAVSTA Newport's property management instruction. These restrictions are used to limit future activities or uses of a site to prevent human contact with contaminated media. LUCs commonly used to reduce exposure to contaminated media include prohibitions on installing water supply wells, restrictions on types of development allowed (e.g., no residential use), disturbing components of the remedy (digging into cover systems), and limitations on certain types of construction (e.g., excavation, construction of buildings with basements).

Any LUCs would be implemented in accordance with the *Principles and Procedures for Specifying, Monitoring, and Enforcement of Land Use Controls and Other Post-ROD Actions*, (DoD, 2003). The manner in which LUCs are developed is currently through a document referred to as a LUC RD. This document would define the limitations of the control and the applicability, etc. LUC RDs will be developed in accordance with applicable current guidance and agreements between the EPA and the Navy. The LUC RD drafted by the Navy is approved by USEPA and the State and is enforceable under the FFA.

Any time that the Navy retains the property, the "activity" (in this case the "activity" is the NAVSTA Newport Public Works Department) enforces any LUC necessary. Under the FFA, the Navy must allow access to the regulatory agencies to monitor and enforce LUCs; however, the manner in which the LUCs are to be enforced will be addressed in the ROD and the FFA. The Navy's policies for implementing LUCs and demonstrating that such controls remain protective at NAVSTA Newport were addressed in a letter from the Navy to RIDEM (NAVFAC MidLant, 2007). The letter affirms the FFA requirement for the Navy to allow access to the State and USEPA for inspection and enforcement activities.

The LUC RD is tracked by the Navy through a centralized system to assure each LUC is maintained appropriately. In the event that a property is sold or transferred, the Navy will create and record deed restrictions that will meet local and state requirements. The restrictions presented in the LUC RD may limit allowable activities such as development of the Site for residential or uncontrolled recreational use.

Restrictions would also prevent the disturbance to any component of the remedy. In accordance with the ROD, LUCs would be monitored and enforced as long as contaminants are present that pose a risk above CERCLA risk levels, as determined through the five-year review process.

If the land is sold and released from Navy jurisdiction, the land use restriction that was incorporated into the base instruction is written into the deed for the new property and recorded against the property title. The format of the land use restriction would meet local or Rhode Island recording standards. The regulatory standards for institutional controls in the State of Rhode Island are termed ELURs. Currently there is no plan for excess of Navy property at or in the vicinity of DU 4-1.

In cases where LUCs, including base instructions or ELURs, are placed to address contamination at a site, the Navy must submit an annual report to the regulatory agencies documenting that all of the restrictions are being met. The Navy is also required to take immediate action to correct any violations identified. This report must be submitted every year and the obligations to enforce the restrictions remain as long as levels of contamination exceeding CERCLA risk levels remain on the property.

There is currently a restriction on use of the Site, enforced by the Navy. This instruction allows for Navy staff and personnel to conduct bow hunting by permit only within the confines of Tank Farm 4 in accordance with the seasonal limitations of the State of Rhode Island. This is considered a restricted recreational use of the Site (Section 1.10 of this report). Specifically, the Naval Station manages the personnel who enter this site for this locally permitted recreational use. To acquire access, the user must check in at the NAVSTA Security Office no earlier than one and a half hour prior to sunrise to go into the site and again no later than one and a half hour after sunset. The security office signs that person in and out accordingly. Such management of users is augmented by existing fencing and signage that restricts access to anyone else, other than workers utilizing the site under an industrial scenario (use as a materials lay-down area, storage area, etc).

- Effectiveness: LUCs could be applied to continue to limit access and will be added to limit construction activities. LUCs alone may not be effective in the long term to reduce risk. LUCs are only effective if they are enforced properly. No additional risks to human health and the environment would directly result from the imposition of LUCs.
- Implementability: LUCs for soil on an active base, in the form of base instructions, can be easily implemented by the Navy. Before any property transfer occurs from Navy control, the Navy would establish and record land use restrictions (in the form of an ELUR) against any deed created for the transferred property. This can be readily implemented. Monitoring and enforcement of land use restrictions would also be readily implemented by the Navy.

- Cost: Only administrative actions would be taken, capital costs would be very low and few long-term costs would be incurred for monitoring and enforcing LUCs.

Conclusion – LUCs and Inspections are retained for development into remedial action alternatives. LUCs can be effective based on the restrictions placed. For example, a restriction that does not allow any residential use would prevent development of that area for residential use and prevent residential exposure, therefore mitigating risk to that receptor.

Fencing

Fencing may be used as a barrier to restrict access to areas where contaminants are present at or near the surface, thereby limiting direct contact exposure for human receptors. Access to Tank Farm 4, of which DU 4-1 is a part is currently partially restricted by gates and fencing. However, if it is necessary to further restrict access to target areas of DU 4-1, new fencing around those specific areas would be required. It is recognized by the Navy that periodic inspections and repairs of the fencing would be included as a maintenance program to ensure continued effectiveness of the remedy.

- Effectiveness: Fencing alone would not meet RAOs for soil because it is not effective in the long term to reduce risk. It would help to meet RAOs along with LUCs and would be useful to prevent human access to contaminated areas or operating remedies. No additional risks to human health would result from the installation of fencing as long as soil management procedures are followed in areas where soil exceeds risk levels for soil COCs.
- Implementability: Installation of new fencing is readily implementable. Contractors and equipment are readily available for fence installation and maintenance.
- Cost: The capital and long-term costs for fencing would be low.

Conclusion – Fencing is retained for development into remedial action alternatives.

Signs

The posting of signs may be used as a means of indicating areas where contaminants are present at or near the surface, thereby minimizing direct contact exposure for human receptors. Signs are usually posted around the perimeter of a site at a designated frequency (e.g., every 100 feet around the perimeter of a landfill). Signs can be mounted to fencing or on a post near an access point, or at a perimeter of a target area.

- Effectiveness: Sign posting alone would not meet RAOs for soil because it is not effective in the long term to reduce risk. It would help to meet RAOs along with fencing and LUCs. No additional risks to

human health and the environment would result from the installation of signs as long as soil management procedures are followed in areas where soil exceeds risk levels for soil COCs.

- Implementability: Installation of new signs is readily implementable. Contractors and equipment are readily available for sign installation and maintenance.
- Cost: The capital and long-term costs for posting signs would be low.

Conclusion – While the use of signs alone is not effective in achieving RAOs, it is retained for development into remedial action alternatives in conjunction with other technologies, to limit exposure to soil contaminants.

Groundwater Monitoring

Groundwater monitoring can be used as a component of soil remedies as a means to determine whether contaminants left in place in the soil migrate to the groundwater (leaching). Groundwater monitoring is usually performed periodically at several locations, including upgradient of the contaminated area, within the contaminated area, and downgradient of the contaminated area. Locating groundwater monitoring wells in this manner allows for the determination of site contaminant migration and the identification of contaminant sources upgradient of the area of investigation. Typically, the cost for groundwater monitoring for FS purposes considers monitoring for a period of 30 years, and the development of a long-term groundwater monitoring plan. However, the ROD and groundwater monitoring plan would identify the sampling frequency, duration, and decision rules to be followed under such a program.

- Effectiveness: Groundwater monitoring alone would not meet RAOs for soil because it is not effective in the long term to reduce risk from direct exposure to the soil. However, groundwater monitoring is often used to determine the effectiveness of selected remedies, or to confirm that residual levels of COCs are not mobilized. Using the proper sampling techniques and the appropriate personal protective equipment, no additional risks to human health and the environment would result from the implementation of a groundwater monitoring program.
- Implementability: Installation of a long-term groundwater monitoring program is readily implementable. Contractors and equipment are readily available for groundwater monitoring well installation, groundwater sample collection, and laboratory analysis.
- Cost: The capital and long-term costs for a long-term groundwater monitoring is low.

Conclusion – Soil COCs (PAHs and arsenic) are not found in groundwater at elevated concentrations (arsenic is present, but below the MCL), it is not believed that these soil COCs are leaching into the groundwater, and therefore groundwater monitoring as part of the soil alternatives is not necessary. The elevated levels of other metals present in groundwater (groundwater COCs - manganese, cobalt, and iron) are thought to be a result of redox conditions resulting from the degradation of petroleum onsite

and/or in upgradient groundwater. However, since the source of these metals is uncertain, and to assure compliance with both the soil and groundwater RAOs, groundwater monitoring is retained as a component of soil remedial action alternatives.

3.3.3 Containment

Soil containment would involve the establishment of a waste management area under identified ARAR standards. The following containment technologies and process options for contaminated soil are evaluated in this section.

- Impermeable Cap
- Permeable Cover

Impermeable Cap

Impermeable capping involves installing an impermeable barrier over the contaminated soil to restrict access to the contaminated soil and to reduce infiltration of water (i.e., precipitation) into the subsurface or onto the surface where erosion is likely to take place. Such barriers are appropriate where soil contamination threatens groundwater or surface water, and is typically used for the purposes of reducing the leaching of contaminants from soil to groundwater. Regrading of soil prior to capping may be required. Cap materials can either be natural or synthetic. Frequently used materials include low-permeability clay, bentonite enhanced soils, and geomembranes such as liner low density polyethylene, polyvinyl chloride, and Hypalon®. These materials are typically covered with clean fill and controlled vegetation (grass) or clean fill and asphalt to protect them against damage caused by puncturing and weathering.

- Effectiveness: Capping can prevent direct exposure to contaminated soil and reduce the migration of COCs from the Site. Capping is a reliable technology that would reduce risk by providing a barrier between contaminated soil and potential receptors. Capping can be effective in reducing the infiltration of water and consequently, any potential leaching of contaminants from unsaturated soil to groundwater (Note: however, the soil PRGs did not require protections for leachability of COCs to groundwater). Capping does not eliminate the natural flow of groundwater through the subsurface; any contaminated soil in the saturated zone would remain a possible continuing source of contamination to groundwater if the COCs are leaching. Capping only isolates existing soil contamination at the surface, offering no decrease in contaminant mass. Since contaminated soil remains in place, the long-term effectiveness of capping depends on adequate long-term cap maintenance.

- **Implementability:** Construction of an impermeable cap is implementable at DU 4-1 for hot spot areas. A variety of proven capping materials can be used, including bentonite enhanced soil, low permeability clay, geomembranes, and combinations of these materials. Site conditions at DU 4-1 are amenable to installation of caps and covers within specific areas. Remedial activities involving regrading and capping are relatively common and can be conducted by many contractors. No permits or other administrative requirements would be necessary for construction activities, although because the waste is left in place, there would be requirements to manage it over time: A waste management area would have to be established and LUCs would be required in conjunction with capping to limit the future use of the capped areas or actions that may damage the cap. Long-term O&M of the cap system and groundwater monitoring would also need to be implemented in accordance with State waste management regulations.

Installation of a cap over the entire area of DU 4-1 is not easily implementable due to the size of the area (14 acres) and the subsequent loss of woodland and wetland habitat. Installation of a cap over the portions of DU 4-1 that exceed industrial PRGs is easily implementable.

- **Cost:** The capital costs for impermeable cap construction are moderate to high, depending on the size of the areas to be capped. Long-term O&M costs of impermeable cap systems can be moderate, depending on the monitoring requirements imposed for the waste management area.

Conclusion – Isolating small areas of soils in place with an impermeable cap in conjunction with LUCs would prevent exposure to contaminated soil, and would reduce the possibility of COCs leaching from soil to groundwater. However, the management effort required for small areas over time is extensive, particularly as monitoring groundwater within and downgradient of these areas would likely be required, if COC leaching was a concern. The limited size of the area exceeding industrial PRGs and the large size of the area exceeding residential PRGs make it impractical to establish and provide management of a cover and waste management area for the COCs at DU 4-1. Leaching of soil COCs does not appear to be a concern, and because of the high institutional requirements for long-term management of what would be a small waste management area, an impermeable cap is not retained for further consideration in the development of remedial action alternatives.

Permeable Cover

Permeable covers involve installing a soil barrier over the contaminated soil to assist in the restriction of access to the contaminated soil. Permeable barriers are appropriate where soil contamination does not threaten groundwater or surface water resources or are located beneath the water table through leaching, but where direct exposure to COCs in the soil during planned land use is a potential. Cover materials are

typically natural materials but could include geosynthetic separation or marker layers. Clean common fill soils, topsoil, and geotextiles are frequently used materials.

- Effectiveness: Installation of a permeable cover would achieve the RAO for preventing direct exposure to contaminated soil. A permeable cover would not be effective in preventing infiltration or potential leaching of contaminants from unsaturated soil to groundwater. Contaminated soil remains in place when implementing a permeable cover, the effectiveness of a permeable cover in preventing direct exposure to contaminants depends on adequate cover thickness based on expected land use and maintenance over time. Institutional controls such as LUCs would be required in conjunction with the impermeable cover to limit the future use of or intrusion into the covered areas.
- Implementability: Construction of a permeable cover is readily implementable at DU 4-1. Specialized construction techniques are not required, and qualified contractors and necessary cover materials are readily available. Earthwork requirements would be similar to those described for an impermeable cap. Site conditions at DU 4-1 are amenable to installation of caps and covers over small areas. Remedial activities involving regrading and capping are relatively common and can be conducted by general earthwork contractors. No permits or other administrative requirements would be necessary for construction activities. The waste would be left in place, and requirements to manage it over time as a waste management area under RIDEM regulations: LUCs and long-term O&M would also need to be implemented.

Installation of a permeable cover over the portions of DU 4-1 that exceed residential PRGs is not easily implementable due to the size of the area (14 acres) and the subsequent loss of woodland and wetland habitat. Installation of a permeable cover of the portions of DU 4-1 that exceed industrial PRGs is easily implementable.

- Cost: The capital costs for a permeable cover are low to moderate, depending on the size of the areas to be capped. Long-term O&M costs of impermeable cap systems can be moderate, depending on the monitoring requirements imposed for the waste management area.

Conclusion – Isolating areas of soils in place with a permeable cover, in conjunction with LUCs, would prevent exposure to contaminated soil. The management effort required for small areas over time is extensive, particularly if monitoring groundwater within and downgradient of these areas is required. The limited size of the area exceeding industrial PRGs, and the large size of the area exceeding residential PRGs makes it impractical to establish and provide management of a cover and waste management area for the COCs at DU 4-1. Due to the high institutional requirements for long-term management of what would be a small waste management area, an impermeable cap is not retained for further consideration in the development of remedial action alternatives.

3.3.4 Removal

The only soil removal option that is evaluated is bulk excavation.

Bulk Excavation

Bulk excavation involves the large-scale removal of contaminated soil. Traditional excavation equipment such as hydraulic excavators, bulldozers, wheel loaders, and off-road dump trucks are typically used. The excavated material could be loaded onto trucks and hauled over the road to an approved treatment or disposal facility, or could be treated and/or relocated at the Site or another location at NAVSTA Newport. Open excavations would be backfilled using clean fill or treated soil. The Site conditions at DU 4-1 are amenable to bulk excavation with plenty of staging areas, level ground, and work space.

- Effectiveness: Bulk excavation would be highly effective for handling contaminated soil at DU 4-1. DU 4-1 Areas where industrial PRGs are exceeded are small and easily addressed. Areas where residential PRGs are exceeded are quite large and would require much earthwork. Control of fugitive dust would be required during excavation. Standard engineering controls such as dust suppressants would adequately and safely control airborne contaminants. This technology, combined with subsequent treatment and/or disposal, would be a permanent solution and achieve the RAOs.
- Implementability: Excavation is implementable for reasonable sized portions of vadose zone soil (soil above the groundwater table). Specialized construction techniques are not required, and qualified contractors and necessary equipment are readily available. Excavation would require protection of the Site surface water and implementation of erosion and sediment control measures. If excavated materials are disposed of offsite, transportation and TSD requirements must be met.
- Cost: The capital costs range is dependent on area affected. Under a hot spot excavation (excavation of soil exceeding industrial PRGs), approximately 566 cy of contaminated soil would need to be excavated, surrounding the borings SB934 and SB943, other small hot spots are identified and addressed Section 2.4.1. Assuming typical unit costs for excavation, backfill, and offsite disposal, the total cost of such a scenario would be considered low.

Under a large scale excavation (excavation of soil exceeding residential PRGs), over 80,000 cy of contaminated soil would need to be excavated, and may impact up to 14 acres of woodland and wetland. Assuming typical unit costs for excavation, backfill, and offsite disposal, the total cost of such a scenario would be considered very high.

Conclusion – Removal of contaminated soil by bulk excavation is retained for development of remedial action alternatives, particularly for the removal of soils with the highest concentrations of COCs present

(such as “hot spots”). Addressing all soils which exceed any PRG identified in Section 2 is not practical (whole-site excavation is not implementable or cost-effective), even though hot spot removal only would result in leaving soil in place that may exceed residential PRGs and RIDEM DECs.

3.3.5 Disposal

The only disposal technology evaluated for contaminated soil is offsite landfilling.

Off-site Landfilling

Contaminated soil may ultimately be disposed of at a regulated landfill. Depending on the contaminants and their concentrations, the material may or may not require treatment prior to landfilling. The treatment, if necessary, can be part of a process option chosen in the selected remedy or can be provided by the operator of the landfill as part of the disposal service.

The types of landfills considered are hazardous waste landfills and non-hazardous waste landfills. The principal differences between these landfills are the administrative requirements and the lining, leachate collection and removal, and cap systems. These two types of landfills are described as follows:

- **Hazardous Waste Landfill**

Hazardous waste landfills are regulated by the landfill and post-closure requirements of RCRA (40 CFR 264 and 265, Subparts G and N), the Toxic Substances Control Act (TSCA) for PCBs, and state and local laws. Among the requirements are foundations, double liner systems, leak detection systems, leachate collection and removal systems, operations, capping, post-closure inspections, maintenance (30-year period), and post-closure groundwater monitoring (30-year period). The need for disposal at a hazardous waste landfill is not anticipated to be necessary for the soils at DU 4-1.

- **Non-hazardous Waste Landfill**

Non-hazardous waste landfills include municipal waste landfills and construction/demolition waste landfills. Design and operating practices are somewhat similar to hazardous waste landfills; however, the lining and cap system requirements are generally not as stringent. These landfills may be used for wastes that are not classified as hazardous but may still contaminate groundwater. Among the design and operating requirements are foundations, liner systems, leak detection systems, leachate collection and removal systems, operations, capping, post-closure inspections, maintenance, and post-closure groundwater monitoring.

Hazardous and non-hazardous waste landfills are currently available off-base to accept wastes.

- **Effectiveness:** Disposal of contaminated soil at a landfill would achieve the RAOs by preventing direct exposure to COCs in soil. Since the soil includes inorganic COCs which are not easily treated, a landfill may be required for ultimate disposal. The technologies available include a hazardous waste landfill and a non-hazardous waste landfill. The selection of one landfill over another depends on the relative toxicity of the contaminated soil, the risks associated with their disposal, and the regulatory requirements.
- **Implementability:** Landfill disposal is implementable, although availability of offsite landfill capacity may be limited. For off-base landfill disposal, transportation requirements must be met to transport the contaminated soil from NAVSTA Newport. Treatment of the contaminated soil, in compliance with RCRA land disposal restrictions (LDRs), is not anticipated to be required based on the concentrations measured. Off-base disposal facilities with these treatment capabilities are available, but may limit the landfills available for waste acceptance. Local Rhode Island landfills are limited; however, equipment and resources needed to transport the contaminated soil are readily available. Additionally, careful consideration should be given to energy-inefficient transport and disposal of large quantities of waste that contain low concentrations of contaminants.
- **Cost:** The capital costs are moderate to high depending on the transportation distance to the landfill. Disposal in hazardous waste landfills is the most expensive of the landfill options (not anticipated), while disposal in a non-hazardous waste landfill is less expensive.

Conclusion – Landfilling is an effective technology that would support the removal of contaminated soil and is implementable when using existing off-base disposal facilities. However, it should be noted that the waste is not permanently addressed with land disposal; the location of the waste is simply transferred from the Site to a facility with management practices in place. For large quantities of material, careful consideration is needed to be sure that such an effort is appropriate. It is likely more appropriate to address small quantities of highly contaminated material in this manner, than it is to address large quantities of material with lesser concentrations of contaminants. Off-base landfill disposal is retained for development of remedial action alternatives.

3.3.6 Summary of Retained Soil Process Options

The following RPOs have been retained for the development of remedial action alternatives to address the risk caused by soil contamination at DU 4-1.

General Response Action	Representative Process Option
No Action	No Action

General Response Action	Representative Process Option
Limited Action	LUCs and Inspections
	Fencing
	Signs
	Groundwater monitoring
Removal	Target Area Excavation
Disposal	Offsite Landfilling

3.4 EVALUATION OF TECHNOLOGIES AND REPRESENTATIVE PROCESS OPTIONS FOR GROUNDWATER

For the remediation of contaminants in groundwater, a variety of technologies and process options are available for each of the GRAs described in Section 3.1. A range of these technology types and process options was identified and screened to focus on only the relevant technologies and process options for this Site.

A summary of the identification and preliminary screening of technologies and process options appropriate for groundwater is provided in Table 3-2, an initial screening step which eliminates some technologies that would not apply to the Site. Many options were eliminated based on the technology screening. An evaluation of the remaining technologies and process options for groundwater remediation is provided in the following subsections.

Only those technologies not eliminated in the initial screening (Table 3-2) or in the detailed evaluation presented in this section are presented in Table 3-4 and retained for inclusion in remedial alternatives for groundwater.

3.4.1 No Action

The no action option is considered to provide a baseline level to which other remedial technologies and alternatives can be compared. Under this option, no removal or treatment of the contaminated groundwater would occur.

- **Effectiveness:** This option would not be effective in achieving the RAOs for contaminated groundwater. This option would not allow the evaluation of either potential contaminant reduction through natural attenuation or potential contaminant migration offsite, because no monitoring would be performed.

- Implementability: No implementability considerations are associated with the no action option.
- Cost: A nominal cost would be required to address the Site in the facility five-year review.

Conclusion – The no action option is retained as a baseline, as required by the NCP.

3.4.2 Limited Action

Limited actions are non-intrusive or less intrusive actions that can be conducted to address COCs. The components of limited actions for groundwater that are included in this evaluation are LUCs and inspections, groundwater monitoring and monitored natural attenuation (MNA).

Land Use Controls and Inspections

Institutional controls would be established through development of a LUC RD to restrict activities within the current Navy base for the purpose of preventing use of groundwater until the PRGs are met. Follow-up inspections would be conducted to ensure that the LUCs are being upheld at the Site as long as groundwater contaminants are present that pose a risk above CERCLA risk levels.

The LUCs are tracked by the Navy through a centralized system to assure each LUC is maintained appropriately. In the event that a property is sold or transferred, the Navy will create and record deed restrictions that will meet local and state requirements. The restrictions presented in the LUC RD may limit future activities such as new well installations, or establish construction restrictions that would restrict access to the groundwater for any reason (for example, developing a residential water supply). Restrictions would also prevent the disturbance to any component of the remedy (monitoring wells). LUCs would be monitored and enforced as long as groundwater contaminants are present that pose a risk above CERCLA risk levels.

- Effectiveness: LUCs would not remove COCs from groundwater or restore aquifer quality; however, LUCs would effectively minimize potential human health risks associated with exposure to COCs in groundwater. No additional risks to human health and the environment would directly result from the imposition of LUCs. Natural attenuation is not anticipated to address mineral content (metals) in groundwater, LUCs would need to remain in place.
- Implementability: LUCs would be implemented at the active base through base instructions created and enforced by the Navy. Before any property transfer were to occur, the Navy would establish and record land use restrictions as an LUC RD, and upon transfer, revise the controls to an ELUR against any deed created for the transferred property. This could be readily implemented. Monitoring and enforcement of LUCs would also be readily implemented by the Navy.

- Cost: Only administrative actions would be taken, capital costs would be very low and limited O&M costs would be incurred for monitoring/enforcing the LUCs.

Conclusion – Use of LUCs with inspections to meet RAOs for protection of human health from exposure to COCs in groundwater is retained for development into remedial action alternatives.

Groundwater Monitoring

Sampling and analysis of groundwater throughout the area where COCs exceed PRGs could be used to evaluate changes in concentrations of COCs and other groundwater chemical parameters. Monitoring could also be used to assess the progress of any natural attenuation that may be taking place as a component for use with other remedial options.

- Effectiveness: Groundwater monitoring by itself would not reduce the toxicity, mobility, or volume of contaminants in the groundwater. However, periodic groundwater monitoring and evaluation of contaminant migration data would help to determine if LUCs need to remain in place if they are selected, and to anticipate and take action to prevent potential adverse impacts, such as contaminant transport offsite. Monitoring would also be helpful in measuring and evaluating the effectiveness of any other groundwater remediation efforts and source control measures.
- Implementability: A groundwater monitoring program could be readily implemented at the Site. Wells are currently in place and could be augmented with new wells as needed.
- Cost: The capital and O&M costs for periodic groundwater monitoring would be relatively low.

Conclusion – Groundwater monitoring would be an effective and implementable method to observe ongoing changes to current groundwater conditions and to support LUCs and other remedial efforts implemented. However, monitoring, alone, does not achieve cleanup goals and is only retained as a component of the limited action presented below, MNA.

Monitored Natural Attenuation

Unlike natural attenuation of organic contaminants, natural attenuation of metals does not result in the actual destruction of contaminants. The natural attenuation of metals relies upon the immobilization of the mineral into a stable and/or nontoxic species. If stabilization and/or toxicity reduction is occurring via natural processes, then natural attenuation is occurring and MNA could be a viable alternative. Appendix A-5 of this report describes the groundwater geochemistry for DU 4-1, and concludes that redox fluctuations that are likely to be caused by the biological degradation of petroleum hydrocarbons at and upgradient of the Site may be occurring, resulting in elevated concentrations of dissolved manganese, iron and cobalt in the groundwater. Over time, it is anticipated that the dissolved concentrations of these metals will be reduced by the continued redox fluctuations as the degradation process completes itself.

The required timeframe for this process is currently estimated at 26 years (bedrock) and 45 years (overburden) based on a predicted rate for three volumes of groundwater to fully flow through the site's saturated zone (Appendix A-8). However, a trend analysis should be conducted using data as it is collected over time, which will help to refine the required period of time for levels of COCs in groundwater to be reduced to levels less than PRGs, and ultimately to reach an unrestricted use condition for the local groundwater at DU 4-1.

Conceptually, once it was confirmed that such attenuation is occurring, groundwater monitoring would be conducted at regular intervals. The monitoring would include the collection and analysis of samples to determine the chemistry of the plume and the distribution of contaminants between solid (particulate) and aqueous (dissolved) phases, to monitor the progress of the natural attenuation in immobilizing and/or changing the COCs to nontoxic species. The chemistry of the groundwater would be determined by measurements of chemical parameters such as oxidation-reduction potential (ORP), dissolved oxygen (DO), pH, alkalinity, temperature, conductivity, total organic carbon (TOC), ferrous and total iron, and other major cations and anions, as well as for the COCs themselves. The distribution of contaminants between solid and aqueous phases would be determined by laboratory analysis of contaminant concentrations in aquifer solids and in groundwater.

- Effectiveness: MNA may be effective in reducing dissolved concentrations of manganese, iron and cobalt to the levels of the PRGs. It is likely that the degradation of petroleum has been occurring for some time, and this process has resulted in elevated levels of dissolved metals. As the petroleum decreases through natural reduction and is augmented through previous removal actions at the Site and upgradient, the naturally occurring processes acting on the metals could immobilize or speciate those metals to particulate, non-toxic or less toxic species over the long term. Since there has been extensive removal actions conducted for the Site and tank areas upgradient of the Site, it is possible that this degradation process is already near conclusion. Limited historical sampling events are available and more data over time would be necessary for further evaluating whether further immobilization or speciation of COCs is occurring at the Site.

As noted above, groundwater monitoring by itself would not provide an effective means of achieving the PRGs, but would be effective in evaluating the effectiveness of MNA. However, monitoring COCs in groundwater would provide an assessment of whether concentrations of COCs are changing through time. Institutional controls such as LUCs would be required in conjunction with the MNA, to limit the future use of groundwater until cleanup goals are reached. Effectiveness of the MNA as a component of a remedy would need to be evaluated as part of the five-year review process.

- **Implementability:** MNA would be easy to implement, although it could continue for an extended period. Monitoring groundwater quality and periodically reviewing site conditions could readily be performed, and the necessary resources are available to provide these services.
- **Cost:** The capital and O&M costs for MNA would be relatively low, depending on the frequency and duration of the effort.

Conclusion – MNA is retained in conjunction with LUCs as a potential remedy for the COCs (manganese, iron, and cobalt) in groundwater at the DU 4-1 Site.

3.4.3 **Containment**

The only containment method evaluated in this section is hydraulic containment.

Hydraulic Containment

Hydraulic containment would use a pumping well system, composed of a series of wells installed in the bedrock aquifer (the water table is in the bedrock) to capture contaminated groundwater. A hydraulic containment system is identical to an extraction well system; containment and extraction are achieved in the same manner. The wells used in a groundwater extraction system would be designed and situated to provide optimum efficiency in maintaining contaminated groundwater in place, and removed, if possible. In turn, the extracted groundwater would require disposal via re-injection to the aquifer or offsite disposal. As necessary, re-injection would be achieved either by injection wells or an infiltration basin.

- **Effectiveness:** The effectiveness of a hydraulic containment system depends largely on the geology and hydrogeology of the aquifers. Hydraulic containment systems have the most chance of success in homogeneous, isotropic overburden aquifers with well-defined source areas and plume extents. At this Site there is no defined source or plume for the COCs in groundwater that pose risk, and as such there is no target area that can be addressed through capture for either treatment or containment. This suggests that groundwater containment by use of an extraction system would be ineffective at the Site unless it was large enough to capture all water entering and leaving the Site.
- **Implementability:** Complete hydraulic containment using a pumping well system in bedrock is not a proven technology. Even partial hydraulic control in bedrock in similar situations has been shown to be inconsistently effective. Implementation of this technology would require long-term O&M of wells and pumps. It would also include the construction and O&M of an infiltration basin or injection wells or the disposal of extracted groundwater at an offsite facility. Required maintenance may include periodic replacement of mechanical components and well flushing to remove fine-grained material that may clog the wells and the infiltration basin. Overall, it is not expected that effective containment would be implementable at this Site.

- Cost: The capital costs for groundwater extraction wells are low. The capital costs for groundwater infiltration basin or re-injection wells are also low. The anticipated number and size of these that would be required to capture groundwater entering and leaving the Site would be high. The O&M of extraction wells, injection wells or an infiltration basin, as needed, or disposal of extracted groundwater, would result in an overall cost for this action to be moderate to high.

Conclusion – While hydraulic containment of the groundwater is possible, the application at sites where widespread COCs are not present at concentrations greater than PRGs is not viable in controlling those COCs because there is no source/plume to address. Therefore, hydraulic containment is not retained for further development into remedial action alternatives.

3.4.4 Removal

The only technology and process option considered under this GRA is groundwater extraction with wells.

Extraction Wells

The extraction well option would use a pumping well system identical to a hydraulic containment system described in Section 3.4.3, composed of a series of wells installed in the bedrock aquifers, to capture contaminated groundwater for treatment (as needed) and eventual disposal either via re-injection or offsite disposal at a permitted facility. The wells used in a groundwater extraction system are normally designed and situated to provide optimum efficiency in capturing contaminated groundwater as it is traveling within a predicted flow path, while minimizing the collection of uncontaminated groundwater. There is no source or plume to intercept, causing this standard approach to not apply.

- Effectiveness: The effectiveness of a groundwater extraction system depends largely on the geology and hydrogeology of the aquifers, and the confidence in the contaminant plume flow path. At this Site there is no defined source or plume for the COC in groundwater that poses risk, as such there is no target area that can be addressed through capture for either treatment or containment. This suggests that capturing COCs through groundwater extraction would be ineffective at the Site.
- Implementability: Groundwater extraction in bedrock is not a proven technology. Even partial plume capture in bedrock has been shown to be inconsistently effective. Implementation of this technology would require long-term O&M of wells and pumps. It would also include the construction and O&M of an infiltration area or re-injection wells or the disposal of extracted groundwater at a permitted offsite facility. Required maintenance may include periodic replacement of mechanical components and well flushing to remove fine-grained material that may clog the wells. Overall, it is not expected that effective containment would be implementable at this Site.

- **Cost:** The capital costs for groundwater extraction wells are low. The capital costs for groundwater infiltration basin or re-injection wells are low. The O&M of extraction wells, injection wells or an infiltration basin, as needed, or disposal of extracted groundwater, would result in moderate additional costs. The costs of the treatment plant, as needed, are high and would likely be required for an extended timeframe. These added costs would result in the cost for this action to be high.

Conclusion – While groundwater extraction is possible, its application at sites where widespread COCs are not present at concentrations greater than PRGs would not be viable in controlling those COCs because there is no source/plume to address. Therefore, groundwater extraction is not retained for further development into remedial action alternatives.

3.4.5 In-Situ Treatment (Bioprecipitation)

In-stu treatment is selected for further evaluation based on the CSM indicating that releases of petroleum to the subsurface at and upgradient of DU4-1 have occurred in the past. This GRA is also developed to accommodate EPA preference for treatment and to provide a somewhat aggressive remedial option.

A detoxification process was selected as a representative process option for treatment to address the metals present in groundwater. Bioprecipitation is a process by which the toxic forms of metals mobilized in groundwater can be sequestered through precipitation of mobilized metals into insoluble metal sulfides. This is typically accomplished by installation of a permeable reactive barrier installed to intercept a plume carrying dissolved metals (Hayes, 2009), but at this site since there is no mapped plume of metals that can be targeted for interception, it is theorized that a similar effect may be accomplished through delivery of nutrients on the upgradient portion of the site to encourage sulfate reducing bacteria to grow and transform sulfates in groundwater into sulfides, which will in turn precipitate the metals present as insoluble metal sulfides (Diels et.al, 2010). This approach has been utilized on mine waste sites where high concentrations of metals are present, including cobalt, iron and arsenic, though documentation has not been found regarding use for manganese.

Geochemical conditions at the site indicate that past releases of petroleum to the subsurface at and upgradient of DU 4-1 are indirectly causing elevated concentrations of metals in groundwater at the Site. The conceptual model suggests that the residual petroleum in the subsurface is being degraded by bacteria present naturally in the subsurface during respiration processes. As the petroleum is degraded through natural bacterial action, a side effect is the creation of oxidation-reduction (redox) conditions in those release areas which liberates some metals from their natural sequestration in soil and rock and become mobile with groundwater. As such, the degradation of petroleum is providing a geochemical condition that promotes higher than normal concentrations of metals in the groundwater (particularly

manganese and iron). Respiration requires the presence of an electron acceptor, which will be 'reduced' as it accepts the electron. Terminal electron acceptors include, in order of use in the environment; oxygen, nitrate, manganese/iron, sulfate and carbon dioxide. As petroleum degradation progresses, the dissolved oxygen present in the subsurface lowers in concentration and the ORP becomes lower/more negative. Dissolved oxygen at TF4 was measured between 0.12 – 0.85 mg/l and ORP was measured between -42.8 - +167 mV. The values of these parameters indicate a low oxygen environment where reducing conditions dominate.

When manganese and iron are reduced, they become soluble and relatively high concentrations of these metals can be measured in the groundwater. The Navy has identified this as a likely explanation for the elevated metals concentrations seen in the subsurface at TF4, particularly of manganese and iron. There is no classic 'source area' to target to lower the concentrations of metals in the groundwater at the site, their concentration generally depends on the localized geochemical environment, possibly upgradient of the site, or at the former oil-water separators where petroleum was previously released and then remediated.

The situation at DU 4-1 is not the typical situation when it comes to the remediation of metals; there is not a source area, plume, or a concentration that is orders of magnitude greater than what occurs in nature. In-situ chemical injection programs designed to neutralize inorganics are typically implemented at sites where inorganic concentrations are magnitudes of order higher than what are currently measured at the site. Vendors warn that concentrations measured at DU 4-1 are likely to rebound after treatment and such treatment may not be effective in the long term. Rebound is expected to occur when geochemical conditions (DO, ORP, pH, etc.) return to their former state, thereby bringing the solid precipitates back into solution.

Success of this approach to permanently achieve PRGs in groundwater in the long term is uncertain: Ultimately, treatment of water for metals content is best performed at an extraction-delivery system, and not in-situ. However, since there is currently no end-user for groundwater in this area, in-situ treatment is identified as a GRA.

This option is evaluated as follows:

- **Effectiveness:** The effectiveness of an in-situ Bioprecipitation is based on the concentrations present as well as some complex geochemistry conditions. Concentrations of COCs in groundwater are actually quite low, and reduction of those concentrations will be possible within the area of influence of the injections as long as those injections are continued. All in-situ treatment is based on delivery of the treatment chemicals to the water as it passes through the formation. The effectiveness is also

based on the source of the metals being addressed. Treatment of the groundwater will provide reduced metals concentrations in the downgradient water, however, as soon as treatment is discontinued, the concentrations could rebound unless the source is addressed. It is presumed for this FS that the source of the metals in the groundwater is the geochemical conditions resulting from the degradation of the historic release of petroleum at and upgradient of the site, and as such this treatment process is only intended to address the groundwater during the attenuation process.

- **Implementability:** In-situ injections are implementable through proven technologies that include temporary or permanent groundwater injection wells, pumping equipment and flow control. Careful design and pilot testing of the treatment system would be required to assure proper density of injection wells is utilized, and the proper delivery rate of treatment chemicals is achieved based on the groundwater flow rates and the geology of the subsurface.
- **Cost:** The capital costs for in-situ groundwater treatment are moderate, but costs over time are considered to be high, and treatment would likely be required for an extended timeframe. The total cost for this action is considered high.

Conclusion – Groundwater treatment is possible and can be utilized, if necessary, in order to assist in bringing the groundwater at the Site to its beneficial reuse. Therefore, in-situ groundwater treatment is retained for further development into remedial action alternatives

3.4.6 Summary of Retained Groundwater Process Options

The following options have been retained for the development of remedial action alternatives to address the groundwater contamination causing risk at DU 4-1.

General Response Action	Representative Process Option
No Action	No Action
Limited Action	LUCs and Inspections
	Monitored Natural Attenuation
	Groundwater Monitoring
Treatment	In-situ Bioprecipitation

3.5 DEVELOPMENT OF REMEDIAL ALTERNATIVES

Remedial alternatives are developed to comply with regulatory criteria applicable to the Site conditions and the media of concern, as directed by the following regulations and guidance:

- *Navy/Marine Corps Installation Restoration Manual* (2000), which dictates that remedial alternatives be consistent with the procedures outlined in the NCP (40 CFR 300.430).
- NCP (40 CFR 300), which establishes the criteria for development and evaluation of remedial alternatives, and further suggests consideration of applicable USEPA directives and guidance.
- *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (USEPA, 1988a).

These documents require that a range of alternatives be developed that eliminate, reduce, or control human and ecological risks. The goal is to select remedies that are protective of human health and the environment, that maintain protection over time, and that minimize untreated waste. According to Section 121 of CERCLA, as amended by SARA, the statutory preference is for remedies that will result in a permanent and significant decrease in toxicity, mobility, or volume of contaminants through treatment and will provide long-term protection. In addition, the NCP requires that certain expectations be considered in developing and screening remedial alternatives. These expectations are as follows:

- Treatment will be used to address the principal threats posed by the Site, wherever practical. Principal threats are considered to be liquids, areas contaminated with high concentrations of toxic compounds, and highly mobile materials, if present.
- Engineering controls, such as containment, will be used for waste that poses a relatively low, long-term threat and for which treatment is impractical.
- A combination of methods will be used, as appropriate, to achieve protection of the environment. In appropriate site situations, treatment of principal threats will be combined with engineering and LUCs for dealing with residuals and relatively low, long-term threats.
- Institutional controls, such as LUCs or deed restrictions, are acceptable to supplement engineering controls for short- and long-term management to prevent or limit exposure to hazardous substances, pollutants, or contaminants.
- The use of innovative technologies will be considered when such use offers the potential for comparable or superior treatment performance or implementability, fewer or lesser adverse impacts, or lower costs for similar levels of performance than previously demonstrated technologies.

Environmental media will be returned to their beneficial uses, when practical, within a reasonable time frame. When restoration of a medium is not practical, actions are expected to prevent further migration and exposure to contaminated media and to evaluate further risk reduction measures.

Alternatives are developed by assembling retained technologies and process options. The *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (USEPA, 1988a) identifies six steps for developing alternatives. The six steps as specified by the USEPA are described below.

1. Develop RAOs specifying the chemicals and media of interest, exposure pathways, and PRGs that permit a range of treatment and containment alternatives to be developed. The PRGs are developed on the basis of chemical-specific ARARs and, when available, other available information (e.g., reference doses [RfDs]) and site-specific risk-related factors.
2. Develop GRAs for each medium of interest defining containment, treatment, excavation, or other actions, singly or in combination that may be taken to satisfy the RAOs for the Site.
3. Identify volumes or areas of media to which GRAs might be applied, taking into account the requirements for protectiveness, as identified in the RAOs, and the chemical and physical characterization of the Site.
4. Identify and screen the technologies applicable to each GRA to eliminate those that cannot be implemented at the Site. Further define the GRAs to specify remedial technology types (e.g., the GRA of treatment can be further defined to include chemical or biological technology types).
5. Identify and evaluate technological process options to select an RPO for each technology type to be retained for consideration. Although specific processes are selected for alternative development and evaluation, these processes are intended to represent the broader range of process options within a general technology type.
6. Assemble the selected RPOs into alternatives representing a range of treatment and containment combinations, as appropriate.

The purpose of providing a range of alternatives is to ensure that all reasonable GRAs are represented and evaluated. A range of alternatives is required by CERCLA to develop alternatives that differ in time to cleanup, cost, scope of remediation, and to evaluate different remedial process options that provide differing benefits and detriments. The technologies and process options retained from the screening and evaluation process are presented in the above text and in Tables 3-3 (soil) and 3-4 (groundwater). In order to address RAOs, alternatives were developed for soil and groundwater to address DU 4-1 contamination. The alternatives are as follows:

Soil Alternatives

Alternative SO1	No Action
Alternative SO2	LUCs and Inspections, Groundwater Monitoring, Fencing and Signs
Alternative SO3	Target Area Excavation, Offsite Landfill Disposal, Groundwater Monitoring, LUCs and Inspections

Groundwater Alternatives

Alternative GW1	No Action
Alternative GW2	Monitored Natural Attenuation, LUCs and Inspections
Alternative GW3	In-Situ Treatment (Bioprecipitation), Long-Term Monitoring, LUCs and Inspections

Detailed descriptions and evaluations of these alternatives are presented in Section 4.0 (soil alternatives) and Section 5.0 (groundwater alternatives). The following section presents the alternative evaluation criteria.

3.6 NATIONAL CONTINGENCY PLAN EVALUATION CRITERIA AND RELATIVE IMPORTANCE OF CRITERIA

The evaluation criteria, as required by the NCP, and the relative importance of these criteria in the CERCLA process, are described in the following sections and are applicable to evaluation of alternatives at DU 4-1.

3.6.1 Evaluation Criteria

In accordance with the NCP (40 CFR 300.430), the following nine criteria are used for the evaluation of remedial alternatives:

- Overall Protection of Human Health and the Environment
- Compliance with ARARs
- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume through Treatment
- Short-Term Effectiveness
- Implementability
- Cost
- State Acceptance
- Community Acceptance

Overall Protection of Human Health and the Environment

Remedial alternatives must be assessed for adequate protection of human health and the environment in both the short- and long-term. The remedial alternatives must be able to diminish the unacceptable risks posed by hazardous substances or contaminants present at the Site by eliminating, reducing, or controlling exposure to levels exceeding remediation goals.

Compliance with ARARs and TBCs

Remedial alternatives must be assessed to determine whether they attain ARARs and TBCs under federal environmental laws and state environmental or facility citing laws. If one or more regulations that are applicable cannot be complied with, a waiver must be invoked.

Long-Term Effectiveness and Permanence

Remedial alternatives must be assessed for the long-term effectiveness and permanence they offer, along with the degree of certainty that the alternative would prove successful. Factors that are considered, as appropriate, include the following:

- Magnitude of Residual Risk – Risk posed by untreated waste or treatment residuals at the conclusion of remedial activities. The characteristics of residuals are considered to the degree that they remain hazardous, taking into account their volume, toxicity, mobility, and propensity to bioaccumulate.
- Adequacy and Reliability of Controls – Controls, such as containment systems and LUCs, that are necessary to manage treatment residuals and untreated waste must be shown to be reliable. In particular, this evaluation considers the uncertainties associated with land disposal for providing long-term protection from residual contamination, assessment of the potential need to replace technical components of the alternative (such as a surface cover, sign, or treatment system), and the potential exposure pathways and risks posed if technical components or the entire remedial action needs to be replaced.

Reduction of Toxicity, Mobility, or Volume through Treatment

The degree to which the remedial alternative employs recycling or treatment that reduces the toxicity, mobility, or volume is assessed. This assessment includes how treatment is used to address threats posed by the Site. Factors to be considered, as appropriate, include the following:

- Treatment or recycling processes that the remedial alternative employs and the materials that they will treat.
- Amount of hazardous substances, pollutants, or contaminants that will be destroyed, treated, or recycled.

- Degree of expected reduction in toxicity, mobility, or volume of waste caused by treatment or recycling, and the specification of which reduction(s) is occurring.
- Degree to which the treatment is irreversible.
- Type and quantity of residual contamination that will remain following treatment considering the persistence, toxicity, mobility, and propensity to bioaccumulate of such hazardous substances and their constituents.
- Degree to which treatment reduces the inherent hazards posed by principal threats at the Site.

Short-Term Effectiveness

The short-term impacts of the remedial alternative are assessed considering the following:

- Short-term risks that might be posed to the community during implementation.
- Potential impacts on workers during remedial action and the effectiveness and reliability of protective measures taken to minimize these impacts.
- Potential environmental impacts of the remedial action and the effectiveness and reliability of mitigative measures during implementation.
- Time until protection is achieved.

Implementability

The ease or difficulty of implementing the alternative is assessed considering the following types of factors, as appropriate:

- Technical feasibility, including technical difficulties and unknowns associated with the construction and operation of a technology, reliability of the technology, ease of undertaking additional remedial actions, and ability to monitor the effectiveness of the remedy.
- Administrative feasibility, including activities needed to coordinate with other offices and agencies and the time required to obtain approvals from other agencies.
- Availability of services and materials, including the availability of adequate offsite treatment, storage capacity, and disposal capacity and services; availability of necessary equipment, specialists, and additional resources; availability of services and materials; and availability of prospective technologies.
- Sustainability of an alternative is discussed and includes consideration of the relative size of the associated carbon footprint, material usage, and environmental benefit.

Cost

Costs for remedial alternatives include both capital costs and annual O&M costs. Capital costs include both direct and indirect costs expected at the time of alternative implementation. Annual O&M costs

include periodic costs that occur following alternative implementation. Typical O&M costs can include periodic inspections and long-term monitoring. A present worth of the capital and O&M costs is also provided. The present worth of a remedial alternative is the total of all capital and O&M costs expressed in today's dollars. Typically, the cost estimate accuracy range during the FS stage is +50 percent to -30 percent of the actual remedial action cost.

State Acceptance

This criterion reflects the statutory requirements to provide for substantial and meaningful regulatory involvement. Formal assessment of regulatory acceptance is completed during the ROD phase, occurring after the public comment period on the Proposed Remedial Action Plan (PRAP). In addition, regulatory concerns are continually considered through resolution of regulatory comments received on the FS Report and PRAP.

Community Acceptance

This criterion refers to comments from community members on the remedial alternatives under consideration, where "community" is broadly defined to include all interested parties. These comments are considered throughout the CERCLA process. The community acceptance criterion is evaluated as part of the responsiveness summary presented in the ROD after the public comment period on the PRAP is held.

3.6.2 Relative Importance of Criteria

Among the nine criteria, the threshold criteria are considered to be:

- Overall Protection of Human Health and the Environment
- Compliance with ARARs and TBCs

The threshold criteria must be satisfied for an alternative to be eligible for selection.

Among the remaining criteria, the following five criteria are considered to be the primary balancing criteria:

- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume through Treatment
- Short-Term Effectiveness
- Implementability
- Cost

The balancing criteria are used to weigh the relative merits of alternatives.

The remaining two criteria, State Acceptance and Community Acceptance, are considered to be modifying criteria that must be considered during remedy selection. These last two criteria are evaluated after the end of the public comment period on the PRAP. Therefore, Sections 4.0 and 5.0 of this FS evaluate seven of the nine criteria for soil and groundwater alternatives, respectively.

4.0 DESCRIPTION AND DETAILED ANALYSIS OF SOIL ALTERNATIVES

The purpose of this section is to describe the remedial alternatives developed in Section 3 for the remediation of the DU 4-1 soil, to evaluate the soil remedial alternatives against the NCP evaluation criteria, and to compare each of the soil remedial alternatives to one another. The remedial action alternatives developed in Section 3.5 include:

Alternative SO1: No Action

Alternative SO2: LUCs and Inspections, Groundwater Monitoring, and Fencing and Signs

Alternative SO3: Target Area Excavation, Offsite Landfill Disposal, Groundwater Monitoring and LUCs and Inspections

4.1 DESCRIPTION OF REMEDIAL ALTERNATIVES

Sections 4.1.1 through 4.1.3 describe the alternatives developed to address the DU 4-1 soil contamination. The alternatives were developed to address soil and debris in the areas identified as posing potential risks to human health and the environment. Target soils are summarized in Section 2.4.1 of this report. An abbreviated summary of these alternatives is provided in Table 4-1.

4.1.1 Alternative SO1 - No Action

The no action alternative, as required under the NCP, would involve no remedial response activities and would provide no additional protection of human health or the environment; this alternative provides a baseline for comparison to other alternatives. Under this alternative no remedial actions would be performed, no measures would be implemented to restrict access to DU 4-1, and no actions would be taken to warn people of the hazards. Existing measures that currently provide some protectiveness but that would not be maintained in the future include partial fencing and signs that limit access to portions of the Site.

In accordance with Navy guidance on alternative development, it is assumed that five-year reviews of DU 4-1 would be conducted as part of the facility five-year review process. Under the no action alternative, only nominal costs would be anticipated for review of DU 4-1.

4.1.2 Alternative SO2 – Land Use Controls and Inspections, Groundwater Monitoring, Fencing and Signs

Alternative SO2 would include establishing LUCs to prevent use of the property for residential and other unrestricted uses. Soil would remain onsite at concentrations greater than PRGs; therefore, LUCs would be established to prevent residential and unrestricted recreational use of the property, and thus prevent the exposure of such receptors to COCs in soil. Groundwater monitoring would be conducted to assure that soil COCs left in place at levels exceeding residential PRGs are not leaching into the groundwater medium. Fencing and signage would be required to prevent inadvertent access to any soil area which exceeds PRGs for industrial users. Figure 4-1 presents a summary of Alternative SO2. Details of each component of Alternative SO2 are as follows.

LUCs and Inspections – The intent of LUCs is to ensure that the land use (industrial) and site features within the designated areas do not change and remain in place so that contact with COCs at concentrations that would cause an unacceptable risk to human receptors is prevented for the life of the remedy. LUCs, augmented with signs and partial fencing would serve to prevent use of the site for residential or unrestricted recreational purposes and to identify and prevent disturbance of components of the remedy (including fencing and monitoring wells). It would also aid to prevent exposure of manganese in soil to construction workers by identifying potential excavation hazards. To implement LUCs, the Navy would prepare a LUC RD that would document the LUCs, O&M requirements, inspection requirements, and organizations responsible for implementation of the LUCs. Requirements for management of excavated soil as part of any future construction activities (including fencing, singe, monitoring wells installation) at the Site would also be included as part of the LUCs.

Any LUCs would be implemented in accordance with the *Principles and Procedures for Specifying, Monitoring, and Enforcement of Land Use Controls and Other Post-ROD Actions*, (DoD, 2003). The manner in which LUCs are developed is currently through a document referred to as a LUC RD. This document would define the limitations of the control and the applicability, etc. LUC RDs will be developed in accordance with applicable current guidance and agreements between the USEPA and the Navy. The LUC RD drafted by the Navy is approved by USEPA and the State and is enforceable under the FFA.

Any time that the Navy retains the property, the “activity” (in this case the “activity” is the NAVSTA Newport Public Works Department) enforces any LUC necessary. The LUC RD is tracked by the Navy through a centralized system to assure each LUC is maintained appropriately. In the event that a property is sold or transferred, the Navy will create and record deed restrictions that will meet local and state requirements. The restrictions presented in the LUC RD would limit activities such as development of the Site for residential or uncontrolled recreational use. Restrictions would also prevent the disturbance to any component of the remedy. In accordance with the ROD, LUCs would be monitored and enforced as long

as contaminants are present that pose a risk above CERCLA risk levels, as determined through the five-year review process.

If the land is sold and released from Navy jurisdiction, the land use restriction that was incorporated into the base instruction is written into the deed for the new property and recorded against the property title. The format of the land use restriction would meet local or Rhode Island recording standards. The regulatory standards for institutional controls in the State of Rhode Island are termed ELURs. Currently there is no plan for excess of Navy property at or in the vicinity of DU 4-1.

In cases where LUCs, including base instructions or ELURs, are placed to address contamination at a site, the Navy must submit an annual report to the regulatory agencies documenting that all of the restrictions are being met. The Navy is also required to take immediate action to correct any violations identified. This report must be submitted every year and the obligations to enforce the restrictions remain as long as levels of contamination exceeding CERCLA risk levels remain on the property.

For the purposes of the FS and developing a cost estimate, it was assumed that annual inspections of the Site would be conducted to verify continued effectiveness of the LUCs and that periodic minor repair of warning signs and target area fencing would be required, based on the results of the annual site inspections. Annual reports would be submitted to USEPA and RIDEM to document that the conditions of the Site LUCs continue to be met.

Groundwater Monitoring – Groundwater monitoring would be conducted under this alternative to assure that COCs remaining that are above PRGs at the site are not leaching into the groundwater from the soil.

Fencing and Signs – Fencing would restrict human access to areas where contaminants are present above PRGs for industrial use in surface soil. While access to Tank Farm 4 is currently partially restricted by gates and fencing, new fencing around specific areas would be installed under this alternative. Signage would consist of warning signs that would alert possible entrants to the presence of contaminated soil and dig restrictions. Fencing and signage requirements and maintenance would be documented in the LUC RD prepared by the Navy. For the purposes of the FS and developing a cost estimate, it was assumed that periodic minor repair of warning signs and fencing would be required based on the results of the annual Site inspections to be conducted in conjunction with the implementation of the LUCs.

Five-Year Reviews – Contamination would remain in excess of levels that allow for unrestricted use and unlimited exposure, therefore, five-year reviews would be required under this alternative to evaluate the continued adequacy of the remedy. The five-year reviews would be performed as part of the facility five-year reviews.

4.1.3 Alternative SO3 – Target Area Excavation, Offsite Landfill Disposal, Land Use Controls and Inspections, and Groundwater Monitoring

Alternative SO3 would include excavation of soil in targeted (hot-spot) areas to predetermined depths and offsite disposal of these soils at a licensed landfill facility. As demonstrated in Appendix B-2, resulting risk would be below the USEPA target cancer risk range of 1E-4 to 1E-6. Some soils would remain that exceed RIDEM-based PRGs for unrestricted use, therefore, this alternative also includes LUCs to prevent exposure to COCs exceeding PRGs. Groundwater monitoring would be conducted to assure that soil COCs left in place at levels exceeding residential or industrial PRGs are not leaching into the groundwater. Figure 4-2 presents a summary of Alternative SO3. Details of each component of Alternative SO3 are as follows.

Removal of Target Area Soil – The goal of the target area removals is to remove soil (and debris) specific to each target area as described in the following paragraphs. Following these removals, subsurface soil remaining after backfill may exceed residential and/or industrial PRGs for arsenic and manganese, and therefore LUCs, monitoring and inspections (also described below) will be required to complete the remedy. Soil containing high concentrations of PAHs at and around SB934, and soil containing high concentrations of arsenic at and around SB943 would be excavated from these target areas. In addition, potential impact areas at the soil/debris berm near SB930 and the former test pits to the northwest of SB924 may also be targeted for removal actions based on preliminary evaluations conducted as the first step of removal actions within these target areas.

Areas currently targeted for excavation are presented on Figure 4-2. A design step will assist in identifying the extent of soils for the removal action. As introduced in Section 2.4.1, this design step will include additional sampling on a grid with 10-foot centers surrounding the target borings (SB934 and SB943), and analysis for total PAHs at SB934 and for arsenic at SB943. Soils near SB934 with total PAHs exceeding 10,000 µg/kg would be targeted for removal, and soils near SB943 with arsenic exceeding 15 mg/kg would be targeted for removal.

The target action level of 15 mg/kg for arsenic for this target excavation area is below the selected PRG for arsenic, which was selected based on background soil conditions, as described in Table 2-4 and Section 2.2.2 of this report. This target level was negotiated with RIDEM based on their concerns with the uncertainty of the background soil data being a mixture of soils previously present at the Site. Utilizing a negotiated target level to determine this excavation completion provides consistency with RIDEM DEC's, and consistency with Navy policy to not establish a PRG or RG that is below background.

In addition, potential impact areas at the soil/debris berm near SB930 and the former test pits to the northwest of SB924 may also be targeted for removal actions based on data quality results from this evaluation.

After completion of excavation, the excavated areas would be backfilled with clean fill to match approximate prior and surrounding surface elevations.

For the purposes of this FS, it is currently assumed that an area 50 feet x 50 feet x 4 feet deep would be excavated at SB934, resulting in approximately 371 cy of soil removed, and an area 50 feet x 50 feet x 2 feet deep would be excavated at SB943, resulting in approximately 185 cy of soil removed. Actual quantities will be calculated following results of the evaluation step as described above.

Additionally, the “debris berm” identified in Section 2.4.1 of this report would be evaluated and removed if solid waste is found within it, and a former test pit west of SB924 would be sampled. The Former Test pit area would be sampled for CICs to determine if PRGs are exceeded in soil, and for TPH at regulatory request. If PRGs are exceeded, additional target excavation may be conducted accordingly using the PRGs to direct the actions. Post excavation sampling would be conducted following removal of soils from target areas to confirm that the remedial action has met the remediation goals. Post excavation sampling will include TPH by regulatory request.

Offsite Landfill Disposal – Contaminated soil that is excavated from target areas would be transported and disposed of at an off-base, licensed landfill facility. As noted above, for the purposes of this FS, it is assumed that a total of approximately 557 cy of soil would be excavated from the target areas and would require offsite disposal. Possible additional excavated soil would be from the “debris berm” and/or from the area of a former test pit west of SB924 is not quantified at this time, but it is assumed that the material can be disposed of in the same manner if it is determined that this material needs to be removed.

LUCs and Inspections – The intent of LUCs is to ensure that the land use (industrial) within the designated area does not change so that contact with COCs at concentrations that would cause an unacceptable risk to receptors is prevented for the life of the remedy. LUCs, augmented with signs and partial fencing would serve to prevent use of the site for residential and unrestricted recreational purposes. It would also aid to prevent exposure of manganese in soil to construction workers by alerting them to potential excavation hazards. In this manner, the soils that exceed state regulatory based remedial objectives (RIDEM DECs) (but do not pose risk under CERCLA) will be addressed.

The LUC boundary to prevent residential use would be the same as the boundary used to alert construction workers to presence of manganese in soil that might pose a dust hazard to excavation

workers. Unless further delineation of soils against PRGs is conducted, the LUC boundary is assumed to be the boundary of the Decision Unit, shown in red on Figure 4-2

Any LUCs would be implemented in accordance with the *Principles and Procedures for Specifying, Monitoring, and Enforcement of Land Use Controls and Other Post-ROD Actions*, (DoD, 2003). The manner in which LUCs are developed is currently through a document referred to as a LUC RD. This document would define the limitations of the control and the applicability, etc. LUC RDs will be developed in accordance with applicable current guidance and agreements between the USEPA and the Navy. The LUC RD drafted by the Navy is approved by USEPA and the State and is enforceable under the FFA.

Any time that the Navy retains the property, the “activity” (in this case the “activity” is the NAVSTA Newport Public Works Department) enforces any LUC necessary. The LUC RD is tracked by the Navy through a centralized system to assure each LUC is maintained appropriately. In the event that a property is sold or transferred, the Navy will create and record deed restrictions that will meet local and state requirements. The restrictions presented in the LUC RD would limit activities such as development of the Site for residential or uncontrolled recreational use. Restrictions would also prevent the disturbance to any component of the remedy. In accordance with the ROD, LUCs would be monitored and enforced as long as contaminants are present that pose a risk above CERCLA risk levels, as determined through the five-year review process.

If the land is sold and released from Navy jurisdiction, the land use restriction that was incorporated into the base instruction is written into the deed for the new property and recorded against the property title. The format of the land use restriction would meet local or Rhode Island recording standards. The regulatory standards for institutional controls in the State of Rhode Island are termed ELURs. Currently there is no plan for excess of Navy property at or in the vicinity of DU 4-1.

In cases where LUCs, including base instructions or ELURs, are placed to address contamination at a site, the Navy must submit an annual report to the regulatory agencies documenting that all of the restrictions are being met. The Navy is also required to take immediate action to correct any violations identified. This report must be submitted every year and the obligations to enforce the restrictions remain as long as levels of contamination exceeding CERCLA risk levels remain on the property.

For this site, LUCs would be augmented with signs. Signage would consist of warning signs that would alert the public to the presence of contaminated subsurface soil and dig restrictions and to identify and prevent disturbance of components of the remedy (including signs, clean cover soils and monitoring wells). Requirements for management of excavated soil as part of any future construction activities at the Site would also be included as part of the LUCs. Because subsurface soil still exceeds industrial PRGs for arsenic and manganese, the surface soil will need to remain uninterrupted in areas and the LUCs will

be required to protect this cover. For the purposes of the FS and developing a cost estimate, it was assumed that annual inspections of the Site would be conducted to verify continued effectiveness of the LUCs and that periodic minor repair of warning signs would be required, based on the results of the annual site inspections. Annual reports would be submitted to USEPA and RIDEM to document that the conditions of the Site LUCs continue to be met.

Groundwater Monitoring – Groundwater monitoring would be conducted under this alternative to assure that COCs remaining that are above PRGs at the site are not leaching into the groundwater from the soil.

Five-Year Reviews – Although risk from soil would be addressed by establishment of LUCs, soil would remain at the Site at levels exceeding ARAR-based and risk-based PRGs. Five-year reviews to evaluate the continued adequacy of the remedy would be performed as part of the facility five-year reviews.

4.2 DETAILED EVALUATION OF REMEDIAL ALTERNATIVES

The remedial alternatives developed in Section 3.6 and described in Section 4.1 are evaluated against the seven NCP evaluation criteria described in Section 3.7. The evaluation analysis of the alternatives provides information to facilitate selection of a specific remedy or combination of remedies. The detailed evaluation of alternatives was developed in accordance with the NCP [40 CFR 200.430(e)] and the *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA, 1988a).

4.2.1 Alternative SO1 - No Action

Consideration of a no action alternative is required under the NCP. At a minimum, it provides a baseline against which other alternatives may be compared. No containment, removal, or treatment of soil contaminants would be conducted. The alternative would provide no mechanism to minimize potential risks to receptors except for the existing fencing and signs, which would not be maintained. The only activities associated with alternative SO1 are the required five-year reviews, which would be conducted as part of the facility five-year review process.

An analysis of this alternative with respect to the NCP evaluation criteria is as follows:

Overall Protection of Human Health: The no action alternative would not provide long-term protection of human health. Alternative SO1 would not achieve RAOs for the protection of human health, and several PAHs and metals would still remain at the Site at concentrations exceeding acceptable risk levels. COCs in the soil would continue to pose risks to human health in the long-term through dermal contact, incidental

ingestion, and possibly through fugitive dust inhalation, during potential future use of the Site. Proper maintenance of the existing fencing and signs currently at the Site would not be verified and could become ineffective over time.

Compliance with ARARs: Table 4-2 summarizes the chemical-specific ARARs and TBCs for Alternative SO1. There are no actions associated with this alternative, there are no identified location- or action-specific ARARs or TBCs, which is discussed in Tables 4-3 and 4-4. This alternative fails to meet chemical specific ARARs and TBCs because it does not address soil presenting unacceptable risks as determined by the baseline risk assessment.

Long-Term Effectiveness and Permanence: Since no remedial actions would occur under Alternative SO1, the estimated risks of effects to human health and the environment would remain. Potential contaminant migration pathways would not be addressed, and COCs remaining at the Site would continue to pose threats to human health and the environment through various exposure pathways.

Under the no action alternative, no inspections or review of site conditions would be conducted, and no further determination of levels of COCs would be conducted. Similarly, there would be no review of property use to determine if persons were being exposed to COCs present. The five-year reviews of the Site would be performed as part of the facility five-year reviews.

Under the no action alternative, no additional controls would be used to manage the contaminants at the Site. Therefore, the evaluation of the adequacy and reliability of new controls is not applicable.

Reduction of Toxicity, Mobility, or Volume Through Treatment: The no action alternative would not reduce the toxicity, mobility, or volume of contamination through treatment, since no treatment is used to address the contaminated soil. As a result, no hazardous substances would be treated or destroyed, and contaminated soil and debris would remain in place.

Alternative SO1 would not satisfy the statutory preference for treatment to reduce risks posed by contaminated soil.

Short-Term Effectiveness: Since no response actions would be implemented, the no action alternative would not pose additional short-term risks to the local community, base personnel, or the environment. Workers that would perform the five-year reviews would be protected from contaminant-related risks by PPE and proper site safety procedures. Potential risks from soil contamination would remain unabated. None of the RAOs would be achieved.

Implementability: This alternative would require no implementation other than completion of the five-year reviews. This activity would not require any permits, but could require minimal coordination efforts between regulatory agencies. Implementation of the no action alternative would not limit future implementation of additional remedial actions at the Site, if deemed necessary.

Cost: A nominal cost for the no action alternative would be incurred to address the Site in the facility five-year review.

Cost Description	Estimated Cost
Capital Costs	\$0
O&M	\$0
Five-year Reviews	\$0*
Present Worth	\$0

* Five-year Reviews at this DU are a component of the Newport facility five-year Reviews.

4.2.2 Alternative SO2 - Land Use Controls and Inspections, Fencing and Signs

Under Alternative SO2, residential and unrestricted recreational risk would be addressed by preventing these land uses through LUCs that would apply to the entirety of the decision unit.

In addition to the LUCs described above to prevent residential and unrestricted recreational use of the site, LUCs would also be required to prevent unrestricted digging within target areas (locations where industrial PRGs are exceeded, which was previously discussed in Section 2.4.1). These LUCs would consist of a base instruction describing the area of concern, and would be augmented by constructing small fenced areas with appropriate signage indicating potential hazards present. Groundwater monitoring would be conducted to assure that site contaminants were not leaching into groundwater since soil with elevated concentrations of PAHs would remain at the site.

An analysis of this alternative with respect to the NCP evaluation criteria is as follows:

Overall Protection of Human Health and the Environment: Alternative SO2 would be protective of human health and the environment under the planned future use (industrial), partly because risk under this use scenario was estimated to be within USEPA and RIDEM thresholds for that use. It would meet state regulatory-based remedial objectives through establishment of institutional controls and fencing.

This alternative would be protective of the risk by preventing other potential future uses, such as residential and unrestricted recreational use through implementation of LUCs, which would protect human

receptors from exposure to the remaining soil contaminants through limiting future use or activity, and would be protective of the industrial user and construction worker by implementing LUCs to prevent uncontrolled excavations into soils where industrial PRGs are exceeded. LUCs would also identify and prevent disturbance of components of the remedy (including any necessary fencing, signs, cover soils, and monitoring wells). Protection of groundwater would be assured through a groundwater monitoring program to identify if contaminants are leaching from soil to groundwater at the site.

Lastly, five-year reviews would be conducted, as required by CERCLA, to assess changing conditions and potential risks. Five-year reviews would assess whether the controls in place were meeting the objectives of the risk reduction. Once the five-year review results have been evaluated, and if contaminant migration is deemed to pose human health risk, then additional response actions may be warranted.

Compliance with ARARs: Tables 4-5, 4-6, and 4-7 summarize chemical, location, and action-specific ARARs and TBCs, respectively, for Alternative SO2. ARAR-Based PRGs would be met through land use controls, fencing and access restrictions to areas that exceed these PRGs.

Long-Term Effectiveness and Permanence: Alternative SO2 would provide long-term effectiveness and permanence. Although no contaminated soil would be removed from the Site, prevention of exposure to the COCs in soil would be obtained by a long-term management strategy described in a LUC RD, and enforced by CERCLA.

The Site would be suitable for continued use similar to the current use, and LUCs would restrict potential human receptors from coming into contact with the soil, under scenarios that could pose unacceptable exposure. LUCs would also prevent disturbance of the ground and would prevent site development for other uses that could provide unacceptable exposure to future site users to site contamination. LUCs would minimize exposure to ARAR-based PRGs established for persons working at the Site as well. Five-year reviews would be conducted to evaluate the continued adequacy of the remedy.

Reduction of Toxicity, Mobility, or Volume Through Treatment: This alternative would not reduce the toxicity, mobility, or volume of contamination through treatment, since no treatment is used to address the contaminated soil. As a result, no hazardous substances would be treated or destroyed, and contaminated soil and debris would remain in place.

Alternative SO2 would not satisfy the statutory preference for treatment to reduce risks posed by contaminated soil.

Short-Term Effectiveness: Alternative SO2 would be effective in the short-term because no active changes to the Site conditions would be undertaken, other than the prevention of change in property use

and fencing. Since there is no risk to existing receptors (industrial use), the SO2 remedy would be effective immediately after implementation.

Implementability: Alternative SO2 is implementable. The resources, equipment, and materials required for preparation and implementation of LUCs are readily available, and systems are in place at the Navy and at NAVSTA to enforce those controls. Resources are readily available for installing fencing and signage and to monitor groundwater as needed. The preparation and implementation of a long-term management plan would require administrative processes that would be easily implemented.

Cost: A detailed estimate of capital, O&M, and present-worth costs for Alternative SO2 is provided in Appendix C-1 and a summary is presented below. Present-worth costs were developed for a 30-year period at a 2.0 percent discount rate.

Cost Description	Estimated Cost
Capital Costs	\$18,767
O&M	\$3,135 ⁽¹⁾
Five-year Reviews	\$25,300 every 5 years ⁽²⁾
Present Worth	\$197,863

1 – Cost for groundwater monitoring is included in the groundwater alternatives for the site

2- Five-year Reviews at this DU are a component of the Newport facility five-year Reviews.

4.2.3 Alternative SO3 - Target Area Excavation, Offsite Landfill Disposal, and Land Use Controls and Inspections

Alternative SO3 would include excavation of hot-spot soil to predetermined depths, and thus render the Site suitable for the future planned industrial and restricted recreational use.

Although the removal of the target area soils will reduce the risk for all receptors from surface and all soil subgroups to within the USEPA target risk range, other soils with metals at concentrations exceeding RIDEM ARAR-based PRGs would remain onsite. Therefore, incorporation of LUCs to prevent unplanned future residential and unrestricted recreational use would be required due to the exceedance of state regulatory-based remedial objectives (RIDEM ARAR-based PRGs). Because subsurface soil still will exceed industrial PRGs for arsenic and manganese, the surface soil (0-2 feet) will need to remain uninterrupted in areas and the LUCs will be required to protect these clean cover soils. LUCs would therefore also be required to prevent disturbance of the surface cover soil and uncontrolled excavation and protect components of the remedy at areas where subsurface soils exceed industrial PRGs (arsenic – Figure 2-6 and manganese – Figure 2-10). LUCs would also prevent disturbance of any other components of the remedy (including any necessary , signs and monitoring wells), and inspections would identify such

disturbances. Groundwater monitoring could be conducted to assure that site contaminants were not leaching into groundwater though residual COCs and concentrations are low enough so that this is unlikely to occur.

An analysis of this alternative with respect to the evaluation criteria is as follows:

Overall Protection of Human Health and the Environment: Alternative SO3 would be protective of human health and the environment under the current and planned future use (industrial).

Under Alternative SO3, risk would be addressed by excavation and offsite disposal of target area soil as demonstrated in Appendix B-2: residual risk would be below the USEPA target cancer risk range of 1E-4 to 1E-6. After removal of target area soils, large quantities of soil exceeding state regulatory-based remedial objectives (RIDEM residential DECs) would remain. LUCs would be established to control excavation in areas where industrial PRGs are not met in the subsurface soil, and to prevent use of the Site for residential and unrestricted recreational uses in order to meet these criteria.

Five-year reviews would be conducted, as required by CERCLA, to assess changing conditions and potential risks. Once the five-year review results have been evaluated, and if contaminant migration is deemed to pose human health risks, then additional response actions may be warranted.

Compliance with ARARs: Tables 4-8, 4-9, and 4-10 summarize chemical, location, and action-specific ARARs and TBCs, respectively, for Alternative SO3. This alternative meets all ARARs.

Long-Term Effectiveness and Permanence: Alternative SO3 would provide long-term effectiveness and permanence. Although not all of the COCs exceeding PRGs for unrestricted (residential) property use would be removed from the Site, risk to current and future users will be reduced through the removal of target area soils. Additional protectiveness is proposed to prevent exposure to the COCs in soil by implementing a long-term management strategy to be described in a LUC RD, and enforced by CERCLA, the FFA and the ROD.

The Site is suitable for continued uses that are similar to its current use (industrial and restricted recreational), and LUCs would restrict potential human receptors from coming into contact with the soil under scenarios that would exceed industrial PRGs and RIDEM residential DECs. LUCs would also prevent disturbance of the ground and would prevent site development for other uses that could provide unacceptable exposure to future site users to site contamination. Five-year reviews would be conducted to evaluate the continued protectiveness of the remedy.

Reduction of Toxicity, Mobility, or Volume Through Treatment: This alternative would not provide any active treatment technologies that would achieve reductions in the toxicity, mobility, or volume of contaminants. The process of excavation would only move the contaminated material to a permitted landfill disposal facility. It is possible that the excavated material would be suitable for treatment offsite, depending on the makeup of the soils and the compounds within it. For example, sandy material with low to moderate concentrations of PAHs may be present at SB934 and could be suitable for asphalt batching. Soils with elevated concentrations of metals, such as may be encountered at SB943, may be suitable for solidification. Both types of materials are expected to be suitable for disposal as landfill cover material. Any treatment that would occur at the landfill disposal facility would be identified during implementation of the remedy action and would be performed independently of this alternative. Therefore, treatment is not identified as a part of this alternative at this point in time.

Short-Term Effectiveness: Alternative SO3 would be effective in the short-term, as long as work is done properly, with proper controls in place. With excavation and offsite transportation and disposal of PAH-contaminated soil, controls will be implemented to protect remediation construction workers, the public, and the environment until site restoration is completed.

Alternative SO3 could be implemented within 1 year and would attain the RAOs upon implementation. Remedial design, construction work plan, LUC RD, and long-term management plan preparation would be completed within the first year and then construction activities would be expected to take 8 months or less.

Implementability: Alternative SO3 is implementable. The resources, equipment, and materials required for excavation of target area soils and backfilling are readily available. There appear to be no obstructions to conducting target area removals.

The remedial design would provide the specifications for soil removal and site restoration. The necessary health and safety requirements for construction activities conducted as part of implementation of the remedy would be identified in the work plan. A traffic control plan would also be necessary due to the truck traffic to haul contaminated soil and clean fill materials. Lastly, the implementation of LUCs and a long-term management plan would require administrative processes to prevent both uncontrolled excavation and to prevent unrestricted use of the site and would be easily implemented.

Cost: A detailed estimate of capital, O&M, and present-worth costs for Alternative SO3 is provided in Appendix C, and a summary is presented below. Present-worth costs were developed for a 30-year period at a 2.0 percent discount rate.

Cost Description	Estimated Cost
Capital Costs	\$744,835
O&M	\$2,585, annual ⁽¹⁾
Five-year Reviews	\$25,300 every 5 years ⁽²⁾
Present Worth	\$911,613

1 – Cost for groundwater monitoring is included in the groundwater alternatives for the site

2 - Five-year Reviews at this DU are a component of the Newport facility five-year Reviews.

4.3 COMPARATIVE ANALYSIS OF SOIL ALTERNATIVES

A comparative analysis is conducted to evaluate the significant differences between alternatives based on the threshold and balancing criteria. This comparative analysis of soil alternatives is presented to address how effectively each alternative would comply with the standards listed in the guidance (USEPA, 1994). The analysis is provided below and summarized in Table 4-11.

Overall Protection of Human Health and the Environment

Alternative SO3 would be the most effective at protecting human health and the environment because most of the contaminated soil would be removed and transported offsite for disposal (to reduce PAH contamination on site). Alternative SO2 is less protective since it relies on institutional controls to assure that risk is adequately reduced. Both Alternatives SO2 and SO3 may eventually lead to equal measures of protectiveness of human health onsite, because both alternatives prevent use of soils under uses that would pose risk, as long as the institutional controls are managed properly for as long as the soils exceed risk-based PRGs. Use of groundwater monitoring under Alternative SO2 provides some additional protection of groundwater, to assure that residual contaminants are not leaching. However, this added protection is minor, since residual concentrations of COCs expected to be left behind after completion of alternative SO3 are not actually high enough to be a threat to groundwater.

The energy cost for alternative SO3 needs to be considered, given that the targeted soil is only being moved to be managed elsewhere, and the same management practices will still be implemented onsite to address remaining soils that exceed the residential land use PRGs. However, if risk management considerations provided in Section 3 of this FS were applied to the Site, it might be recognized that retaining LUCs under alternative SO3 is not needed.

Both Alternatives SO2 and SO3 would include LUCs which add human health protection and prevent exposure to the contaminated soil remaining onsite. Alternative SO1 would not be protective of human health because human receptors' contact with the contaminated soil would not be prevented.

Compliance with ARARs

Alternatives SO2 and SO3 meet chemical-specific, location-specific, and action-specific ARARs. Implementation of either of these alternatives would be compliant and conducted in accordance with regulations. Alternative SO1 would not comply with ARARs because it does not prevent exposure to contaminated soil containing COCs at concentrations exceeding PRGs.

Long-Term Effectiveness and Permanence

Alternative SO3 would have the highest long-term effectiveness due to the removal of the most contaminated soil from the Site. However, Alternatives SO2 and SO3 utilize the same processes over the long-term to provide the desired long-term effectiveness for soil. Alternative SO1 would not be effective or provide permanent protection from contaminants.

Reduction in Toxicity, Mobility, or Volume Through Treatment

None of the three soil alternatives involve reduction in toxicity, mobility, or volume through treatment, as they are presented. However, under alternative SO3, opportunities may be identified for treatment of the excavated soil, based on the nature of the material excavated. The landfill disposal facility may opt to use thermal treatment or some other soil treatment method, or the excavated material may be suitable for recycling as asphalt. However, these treatment options are not evaluated or considered as part of this FS, based on the low quantity of material (556 cy) anticipated to be addressed under this alternative.

Short-Term Effectiveness

Alternative SO1 would be effective in the short-term in that the alternative does not involve any major construction activities that would expose construction workers, the surrounding community and the environment to COC exposure; however, alternative SO1 would not meet RAOs. Alternative SO2 is the next most effective in the short-term, because material would not be removed and transported through the surrounding community. Alternative SO3 provides less short-term effectiveness, due to the extraction and movement of contaminated soil to which construction workers, the surrounding community, and the environment could be exposed.

Implementability

Alternative SO1 would be the easiest to implement because no action is required; however, it is not implementable in an administrative sense because it does not achieve the threshold criteria for the protection of human health and the environment and for achieving ARARs. Alternative SO2 would be more easily implemented than alternative SO3, due to the excavation and transportation of soil offsite.

Cost

Capital, O&M, and present-worth costs for the three soil alternatives are summarized below. It is also noted that for alternative SO1, the no action alternative, a nominal cost would be incurred to address the Site in the facility five-year review.

Costs	<u>Alternative SO1</u> No Action	<u>Alternative SO2</u> Land Use Controls and Inspections, Fencing and Signs	<u>Alternative SO3</u> Target Area Soil Excavation, Offsite Landfill Disposal, and Land Use Controls and Inspections
Capital	\$0	\$18,767	\$744,835
O&M ⁽¹⁾	\$0	\$3,135	\$2,585
Five-year Reviews ⁽²⁾	\$0*	\$25,300 every 5 years*	\$25,300 every 5 years*
30-Year Present Worth	\$0	\$197,863	\$911,613

1 – Cost for groundwater monitoring is included in the groundwater alternatives for the site

2- Five-year Reviews at this DU are a component of the Newport facility five-year Reviews.

5.0 DESCRIPTION AND DETAILED ANALYSIS OF GROUNDWATER ALTERNATIVES

The purpose of this section is to describe the remedial alternatives developed in Section 3 for the remediation of DU 4-1 groundwater, to evaluate the groundwater remedial alternatives against the NCP evaluation criteria, and to compare the two groundwater remedial alternatives. The remedial action alternatives developed in Section 3.5 include:

Alternative GW1: No Action

Alternative GW2: MNA, LUCs and Inspections

Alternative GW3: In-Situ Treatment, Long-Term Monitoring, LUCs and Inspections

5.1 DESCRIPTION OF REMEDIAL ALTERNATIVES

The alternatives described in the sections below were developed to address DU 4-1 groundwater that was identified as posing potential risks to human health. An abbreviated summary of these alternatives is provided in Table 5-1.

5.1.1 Alternative GW1 - No Action

Evaluation of the no action alternative is required under the NCP, and provides a baseline for comparison to other alternatives. The no action alternative assumes no remedial response activities would be conducted, and provides no additional protection of human health or the environment. COCs would remain onsite at levels exceeding PRGs.

Under this alternative, no remedial actions would be performed, no measures would be implemented to restrict access to DU 4-1, and no actions would be taken to warn people of the hazards. There would be no reduction in toxicity, mobility, or volume of the contaminants other than what would result from natural dispersion, dilution, biodegradation, and other unmeasured attenuating factors. No monitoring would be performed to verify that natural attenuation was occurring. Long-term maintenance of existing measures that provide some protectiveness, include fencing and signs around the Site that limit access, would not be verified or maintained under this alternative.

In accordance with Navy guidance on alternative development, it is assumed that 5-year reviews of the Site would be conducted as part of the facility 5-year review process. Under the no action alternative, only nominal costs would be anticipated for review of DU 4-1.

5.1.2 Alternative GW2 – Monitored Natural Attenuation and Land Use Controls and Inspections

The two major components comprising this alternative, MNA and LUCs, are described below. This alternative has been developed based on the CSM indicating that past releases of petroleum to the subsurface at and upgradient of DU4-1 are indirectly causing elevated concentrations of metals in groundwater. As the petroleum is degraded through natural bacterial action, a side effect is the creation of oxidation-reduction conditions in those release areas which liberates some metals from their natural sequestration in soil and rock. As such, the degradation of petroleum is providing a geochemical condition that promotes higher than normal concentrations of metals in the groundwater (particularly manganese and iron). The amount of time to achieve groundwater cleanup goals with MNA is as yet uncertain; however, the time required will be reevaluated at each five year cycle, at a minimum, to assure that the remedy remains acceptable. Figure 5-1 presents the major components of Alternative GW2

Monitored Natural Attenuation - Under this remedial alternative, MNA would be implemented in accordance with the OSWER Directive, *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*, and other MNA guidance documents (USEPA, 1999). Natural attenuation would rely on naturally-occurring processes within the aquifer to reduce the mass, toxicity, volume, or concentration of COCs in groundwater.

Attenuation of metals in groundwater at this Site is expected as described in Appendix A5 and Section 3.4.2 of this report. Based on these assessments, it is expected that the elevated concentrations of metals (manganese, iron and cobalt) that exceed PRGs are present as an indirect result of the biodegradation of petroleum at or upgradient of DU 4-1. Although arsenic contributes to risk to the residential receptor, no PRG is set for this constituent because arsenic concentrations in groundwater are below MCLs.

It is expected that as the biodegradation concludes, much of these dissolved metals will come out of solution and become immobilized in their particulate form. Such attenuation can occur through sequestration by precipitation or adsorption under favorable geochemical conditions to immobilized and/or occluded forms that are rendered inaccessible to persons, even during the residential use of groundwater.

In order to demonstrate the effectiveness of natural attenuation, a quarterly groundwater quality monitoring program will be implemented for the first two years to define seasonal trends, if any. Once a trend in groundwater quality has been established, the Navy will request a change in monitoring frequency to the USEPA and RIDEM for review and approval in order to assure continued decline of the COCs. This continued (annual) monitoring data will support the 5-year review documentation and the LUCs. The 5-year review would evaluate the data collected over time and conclude if 1) MNA is continuing, 2) to determine if PRGs continue to be exceeded, and 3) determine if continuation of the LUCs and monitoring program is appropriate based on the geochemical conditions measured. For the purpose of this FS, the required timeframe for this process is currently estimated at 26 years (bedrock) and 45 years (overburden) based on a predicted rate for three volumes of groundwater to fully flow through the Site's saturated zone (Appendix A-8). It is also assumed that it can be confirmed within two years of quarterly monitoring that the conditions for MNA are favorable and that annual monitoring would be continued for 30 years to assure that the trend is continuing. Based on the actual data results and trends, this annual monitoring could be discontinued at a five-year interval, if appropriate as documented in the five-year review report.

A long-term monitoring plan would be prepared to identify the wells to be sampled, the analyses to be performed, and the need for any new monitoring wells. For the purposes of this FS, it is anticipated that up to 14 groundwater monitoring wells would be required, seven of which are currently present onsite. Installation and development of an additional seven wells would be conducted by a drilling subcontractor; well development would be conducted to assure a good hydraulic connection with the aquifer. Each monitoring event would include measurement of DO, ORP, conductivity, ferrous iron, pH, hydrogen sulfide, sulfate, nitrite, and nitrate, as well as total and dissolved manganese, iron and cobalt, and TPH.

LUCs and Inspections - LUCs would be implemented to control exposure to COCs in groundwater, protect human health during the interim period until PRGs have been achieved in groundwater, and protect components of the remedy (monitoring wells). A LUC RD would be prepared in accordance with the Navy's LUC principles to establish and implement methods and procedures establish and maintain prohibitions for groundwater use for human consumption at DU 4-1 (DoD, 2003). In addition, regular site inspections would be performed to verify the continued implementation of LUCs until the groundwater PRGs have been achieved. The areas to which the LUCs would apply would be identified and surveyed. Although it is not expected to be necessary at this site, the Navy could also coordinate with the property abutters to prevent the installation of a residential drinking water supply well adjacent to (downgradient of) the Site. For DU 4-1, this is unlikely since the property downgradient is a small strip of land between the Site and Narragansett Bay, mostly occupied by Defense Highway.

LUCs would be integrated within, and implemented as part of, existing LUCs at the base. If ownership of the Site is transferred with contamination remaining in place, ELURs would be recorded in accordance with applicable laws and the requirements of the RD. Annual reports would be submitted to USEPA and RIDEM to document that the conditions of the Site LUCs have been met.

Five-Year Reviews – Because this remedy will result (at least temporarily) in hazardous substances, pollutants, or contaminants remaining onsite in excess of levels that allow for unlimited use and unrestricted exposure, in accordance with Section 121(c) of CERCLA and NCP §300.430(f)(5)(iii)(c), a statutory review will be conducted within 5 years of initiation of remedial action and every 5 years thereafter to report on monitoring data available, to document the land uses, and to thus ensure that the remedy continues to be protective of human health and the environment. During such reviews, the Navy, USEPA, and state would review site conditions and monitoring data to determine whether the continued implementation of the alternative is appropriate.

5.1.3 Alternative GW3 – In-Situ Groundwater Treatment, Long-Term Monitoring, Land Use Controls and Inspections

Alternative GW3 would consist of three major components: in-situ biological treatment (in-situ bioprecipitation), LTM, and LUCs (with inspections and five-year reviews, as needed). This alternative has been developed based on the CSM indicating that past releases of petroleum to the subsurface at and upgradient of DU 4-1 are indirectly causing elevated concentrations of metals in groundwater at the Site. As the petroleum is degraded through natural bacterial action, a side effect is the creation of oxidation-reduction conditions in those release areas, which liberates some metals from their natural sequestration in soil and rock. As such, the degradation of petroleum provides geochemical conditions that promote higher than normal concentrations of metals in the groundwater (particularly manganese and iron).

The success of Alternative GW3 to permanently achieve PRGs in groundwater in the long term is uncertain. Ultimately, treatment of water for metals content is best performed as an extraction-delivery system, and not in-situ. However, lacking an actual use of the groundwater at the Site (and thus a delivery system for in-line treatment), an in-situ system has been selected to represent a treatment alternative for the Site. It should be noted that in-situ chemical injection programs designed to neutralize inorganics are typically implemented at sites where inorganic concentrations are magnitudes of order higher than what are currently measured at the site. Vendors warn that concentrations measured at DU 4-1 are likely to rebound after treatment and such treatment may not be effective in the long term.

In-Situ Treatment

In-situ treatment for metals at this site is likely best accomplished through precipitation of mobilized metals into insoluble metal sulfides. This is typically accomplished by installation of a permeable reactive barrier installed to intercept a plume carrying dissolved metals (Hayes, 2009), but at this site since there is no mapped plume of metals that can be targeted for interception, it is theorized that a similar effect may be accomplished through delivery of nutrients to the aquifer to encourage sulfate reducing bacteria to grow and transform sulfates in groundwater into sulfides, which will in turn precipitate the metals present as insoluble metal sulfides (Diels et.al, 2010). This approach has been utilized on mine waste sites where high concentrations of metals are present, including cobalt, iron and arsenic, though documentation has not been found regarding use for manganese.

Conceptually, a solution containing sulfate-reducing bacteria and appropriate nutrients would be injected into the subsurface through injection wells in selected target treatment zones. Treatment zones would be established based on a pilot study and monitoring program conducted as a part of a design step.

For the purposes of this FS, it is assumed that two such treatment zones would be utilized, each set as a double line of injection wells between a potential source area and the locations where manganese, iron, and cobalt exceed the PRGs in groundwater. These lines could be approximately 200 feet long, located (1) hydraulically upgradient of MW912, 913 and 919, and downgradient of Tank 41, and (2) hydraulically upgradient of MW920, 921, and 922 and downgradient of the other tanks and piping loops (Figure 5-2). Injection locations are typically set on a hexagonal grid with a spacing set up based on the transmissivity of the subsurface conditions and the rate of flow of groundwater through the Site. Injection points can be as close as 10 feet horizontally. In the configuration described above, a total of 80 injection points would be required. Vertical position of the injection points would be determined based on the design plan and the detailed subsurface conditions. The volume of treatment chemicals would be determined also through determination of transmissivity but can be as great as 1,000 to 2,000 gallons per injection point so as to saturate the subsurface with nutrients encouraging bacterial growth. Pumping rates are anticipated to be low so as not to overwhelm the geochemistry of the treatment zone, but to slowly build the bacterial count and slowly build a capacity to sequester the metals in the subsurface materials.

The conceptual approach described herein would be confirmed and possibly modified during the Remedial Design phase. During the design phase, a pilot study may be performed at a selected location(s) to verify the conceptual approach and provide information needed to engineer the full-scale system. Some resolution of the source of the highest concentrations of metals would be required prior to developing an injection plan. Supplemented with an understanding of the overburden and bedrock fracture characteristics, and by adding necessary safety factors into design parameters, the final design would be able to account for some of the uncertainties in the behavior of water flow through the Site.

The treatment pilot study and design would be completed in approximately six months followed by full implementation within another six months, and it is assumed that PRGs would be achieved for COCs within one year after full injections are completed. After the COCs are depleted, continued quarterly monitoring for one additional year (two years of monitoring in total) would be required to identify any rebound of COCs in groundwater. For the purposes of this FS, it is assumed that adequate reduction in metals concentrations in and downgradient of the treatment zones would be achieved after two injections, conducted two years apart. Baseline and quarterly monitoring would be performed during and for one year after each treatment to evaluate the progress and need to continue the treatment. All monitoring events would use low-flow groundwater sampling techniques. Using this assumption, and that for two treatment periods, four years of quarterly monitoring would be conducted, after which monitoring would be conducted annually.

However, even after a second series of injections is conducted, reductions may be reversed by the continued oxidation-reduction conditions at and upgradient of the Site if petroleum degradation is continuing in those areas. Continued treatment on intermittent basis may be necessary to compensate for this pattern, until the oxidation-reduction conditions subside. The results of groundwater monitoring would determine the necessity for the continued, intermittent treatment.

Long-Term Monitoring - A long-term monitoring plan would be prepared to identify the wells to be sampled for the purpose of monitoring the effectiveness of the treatment process. The plan would also identify the analyses to be performed, and the need for any new monitoring wells. For the purposes of this FS, it is anticipated that up to 14 groundwater monitoring wells would be required, seven of which are currently present onsite. Installation and development of an additional seven wells would be conducted by a drilling subcontractor; well development would be conducted to assure a good hydraulic connection with the aquifer. Each monitoring event would include measurement of DO, ORP, conductivity, ferrous iron, pH, hydrogen sulfide, sulfate, nitrite, and nitrate, as well as total and dissolved manganese, iron and cobalt. TPH would be included at RIDEM request. As noted above, for the purpose of this FS and costing estimates, four years of quarterly monitoring would be conducted, followed by 26 years of annual monitoring, or until it is demonstrated that monitoring can be discontinued.

LUCs and Inspections - LUCs would be implemented to control exposure to COCs in groundwater, protect human health during the interim period until PRGs have been achieved in groundwater, and protect components of the remedy (i.e. monitoring and injection wells). A LUC RD would be prepared in accordance with the Navy's LUC principles to establish and implement methods and procedures establish and maintain prohibitions for groundwater use for human consumption at DU 4-1 (DoD, 2003). In addition, regular site inspections would be performed to verify the continued implementation of LUCs until the groundwater PRGs have been achieved. The areas to which the LUCs would apply would be

identified and surveyed. Although it is not expected to be necessary at this site, the Navy could also coordinate with the property abutters to prevent the installation of a residential drinking water supply well adjacent to (downgradient of) the Site. For DU 4-1, this would not likely to be necessary since the only property downgradient is a small strip of land between the Site and Narragansett Bay, mostly occupied by Defense Highway.

LUCs would be integrated within, and implemented as part of, existing LUCs at the base. If ownership of the Site is transferred with contamination remaining in place, ELURs would be recorded in accordance with applicable laws and the requirements of the LUC RD. Annual inspection reports would be submitted to USEPA and RIDEM to document that the conditions of the Site LUCs have been met.

Five-Year Reviews – Because this remedy will result (at least temporarily) in hazardous substances, pollutants, or contaminants remaining onsite in excess of levels that allow for unlimited use and unrestricted exposure, in accordance with Section 121(c) of CERCLA and NCP §300.430(f)(5)(iii)(c), a statutory review will be conducted within 5 years of initiation of remedial action and every 5 years thereafter to ensure that the remedy continues to be protective of human health and the environment. During such reviews, the Navy, USEPA, and state would review site conditions and monitoring data to determine whether the continued implementation of the alternative is appropriate. Once PRGs are met, LTM and five year reviews, as well as LUCs and inspections would be discontinued.

5.2 DETAILED EVALUATION OF REMEDIAL ALTERNATIVES

The remedial alternatives developed in Section 3 and described in Section 5.1 are described and evaluated in detail in this section. The evaluation of the alternatives provides information to facilitate selection of a specific remedy or a combination of remedies. The detailed evaluation of alternatives was developed in accordance with the NCP [40 CFR 200.430(e)] and the *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (USEPA, 1988a). The NCP criteria for alternative evaluation is presented and described in Section 3.7.

5.2.1 Alternative GW1 - No Action

Consideration of a no action alternative is required under the NCP. At a minimum, it provides a baseline against which other alternatives may be compared. No containment, removal, or treatment of groundwater contaminants would be conducted. The alternative would provide no mechanism to minimize potential risks to receptors except for the existing fencing and signs, which would not be maintained. No groundwater monitoring would occur, and there would be no restrictions on groundwater use.

An analysis of this alternative with respect to the evaluation criteria is as follows:

Overall Protection of Human Health and the Environment: The no action alternative would not provide any protection of human health. If the Site were to be developed, with groundwater to be extracted for residential use, the COCs present in groundwater at levels exceeding PRGs would be made available to possible future receptors. Alternative GW1 would not demonstrate that RAOs were achieved and COCs may still exist at concentrations exceeding PRG levels. This alternative would include no groundwater monitoring; therefore, any natural attenuation of groundwater COCs would remain unknown.

Compliance with ARARs: Tables 5-2, 5-3, and 5-4 summarize chemical-, location-, and action-specific ARARs and TBCs, respectively, for Alternative GW1. This alternative does not meet chemical-specific ARARs or TBCs.

There are no location- or action-specific ARARs or TBCs for this alternative.

Long-Term Effectiveness and Permanence: Since no remedial actions would occur under Alternative GW1, the identified risks to human health under the potential future residential use scenario would remain. Since there would be no monitoring, the progress of the natural attenuation of groundwater COCs would remain unknown and the potential offsite migration of these COCs would not be detected.

Under the no action alternative, no inspections or reviews of Site conditions would be conducted to determine if the COCs meet PRGs. Similarly, there would be no review of property use to determine if persons were being exposed to COCs present. The five-year reviews of DU 4-1 would be conducted as part of the facility five-year reviews.

Under the no action alternative, no additional controls would be used to manage the contaminants at the Site. Therefore, the evaluation of the adequacy and reliability of new controls is not applicable.

Reduction of Toxicity, Mobility, or Volume Through Treatment: The no action alternative would not reduce the toxicity, mobility, or volume of contamination through treatment, since no treatment would be used to mitigate COCs present in groundwater at concentrations above PRGs.

Short-Term Effectiveness: No action would occur; implementation of Alternative GW1 would not pose any new risks to site workers or result in short-term adverse impact to the local community or the environment. Alternative GW1 may achieve the groundwater RAOs eventually, and although the

groundwater PRGs would likely eventually be met through natural attenuation, this would not be verified because no monitoring would occur.

Implementability: No action would occur; Alternative GW1 would be readily implementable in a technical sense. The technical feasibility criteria, including constructability, operability, and reliability, are not applicable. Implementability of additional administrative measures is not applicable because no such measures would be taken.

Cost: A detailed estimate of capital and O&M costs and net present worth for Alternative GW1 is provided in Appendix C and is summarized below. A nominal cost for the no action alternative would be incurred to address the Site in the facility 5-year review. Net present worth was developed for a 30-year period at a 2.0 percent discount rate.

Cost Description	Estimated Cost
Capital Costs	\$0
O&M	\$0
5-Year Reviews	\$0*
30-Year Present Worth	\$0

* 5-Year Reviews at this DU are a component of the Newport facility 5-Year Reviews.

5.2.2 Alternative GW2 – Monitored Natural Attenuation and Land Use Controls and Inspections

Overall Protection of Human Health and the Environment: Alternative GW2 would be initially protective of human health, preventing the exposure of people to groundwater via the implementation of LUCs. Over the longer term and under favorable geochemical conditions, manganese, iron and cobalt are expected to be sequestered by precipitation or adsorption, to immobilized and/or occluded forms that are rendered harmless to receptors, as the biodegradation of the petroleum in groundwater at or upgradient of the Site continues and concludes. The required timeframe for this process is currently estimated at between 26 years (bedrock) and 45 years (overburden) based on a predicted rate for three volumes of groundwater to fully flow through the Site saturated zone (Appendix A-8). However, a trend analysis should be conducted and updated at the five year review cycles using data collected, which will help to refine the required period of time for levels of COCs in groundwater to be reduced to levels less than PRGs.

Annual monitoring is necessary to document the continuation of the natural attenuation and the need for continuation of the LUCs. Annual monitoring may be discontinued at a five year review cycle if conditions reach and remain below PRGs as documented in the data collected and presented in that five year

review report. The five year review report would present the appropriateness of discontinuing the monitoring program and would be subject to approval by the regulatory parties. For the purpose of this FS, two years of quarterly monitoring is assumed to confirm MNA is occurring and establish the beginnings of a trend, then annual monitoring is anticipated for a 30 year period to assure that COCs do not rebound.

Compliance with ARARs: Tables 5-5, 5-6, and 5-7 summarize chemical-, location-, and action-specific ARARs and TBCs, respectively, for Alternative GW2. Alternative GW2 would comply with chemical-specific ARARs and TBCs through MNA and LUCs. Alternative GW2 would also comply with location- and action-specific ARARs and TBCs.

Long-Term Effectiveness and Permanence: Alternative GW2 provides effectiveness as long as the LUCs remain in place, or until natural attenuation processes reduce the groundwater metals levels. Natural attenuation is expected to permanently reduce groundwater contaminant concentrations to acceptable levels over time, and this will be consistently evaluated over time through the five-year review process, including the trend analysis of data collected during monitoring conducted as part of MNA.

Monitoring is an effective means to evaluate whether or not LUCs need to remain in place, and to document any changes to concentrations of COCs over time. Groundwater use restrictions would effectively prevent the residential use of the groundwater until PRGs are met.

The controls proposed and enforced as part of the LUCs in this alternative are considered reliable.

Reduction of Toxicity, Mobility, or Volume Through Treatment: Alternative GW2 would not reduce the toxicity, mobility, and volume of groundwater COCs, through treatment. There will be no active treatment of groundwater, and natural attenuation is not assured.

Short-Term Effectiveness: Alternative GW2 would reduce human health risks in the short term because groundwater use restrictions would be implemented. Exposure of workers to contamination during groundwater sampling and monitoring well installation and maintenance would be minimized by compliance with Occupational Safety and Health Administration (OSHA) requirements including wearing appropriate personal protective equipment (PPE) and adherence to site-specific health and safety procedures. Implementation of LUCs and groundwater monitoring would not adversely impact the surrounding community or the environment.

The first groundwater RAO would be achieved immediately upon implementation of LUCs. The second would be achieved over time.

Implementability: Sampling and maintenance of existing monitoring wells during monitoring and performance of 5-year reviews could readily be accomplished. The resources, equipment, and materials required for these activities are readily available.

The administrative aspects of Alternative GW2 would be relatively simple to implement. The LUCs would be incorporated into the existing LUC program at the base.

Cost: A detailed estimate of capital and O&M costs and net present worth for Alternative GW2 is provided in Appendix C-2 and is summarized below. Net present worth was developed for a 30-year period at a 2.0 percent discount rate.

Cost Description	Estimated Cost
Capital Costs	\$82,281
O&M/Long-Term Monitoring for MNA	\$115,392 (years 1 and 2); \$30,787 (years 3-30)
5-Year Reviews	\$25,300/5 years*
Present Worth	\$1,044,946

* 5-Year Reviews at this DU are a component of the Newport facility 5-Year Reviews.

5.2.3 Alternative GW3 – In-Situ Groundwater Treatment, Long-Term Monitoring, Land Use Controls and Inspections

Overall Protection of Human Health and the Environment

Alternative GW3 is assumed to be protective of human health and the environment through the active remediation (treatment) of the COCs in groundwater and through the implementation of interim LUCs to prevent exposure to the residual COCs until PRGs are achieved. Treatment would reduce the concentrations of manganese, iron and cobalt during the treatment period until the oxidation – reduction conditions at and upgradient of the Site return to a natural steady state, presumably after the increased bacterial action addresses the historic petroleum releases at the Site.

Monitoring would be necessary to identify reductions and any potential rebound of the COCs after treatment is discontinued.

LUCs would be protective of human health during the remedial period until PRGs are met. Restricting the use of groundwater would be protective of human health by avoiding unacceptable risks from exposure to contaminated groundwater.

Compliance with ARARs

Tables 5-8, 5-9, and 5-10 summarize chemical-, location-, and action-specific ARARs and TBCs, respectively, for Alternative GW3. Alternative GW3 would eventually comply with chemical-specific ARARs and TBCs as long as the treatment system is operated and adjusted as needed to accommodate changing geochemical conditions. Alternative GW3 would be implemented so as to comply with location- and action-specific ARARs and TBCs.

Long-Term Effectiveness and Permanence

Alternative GW3 could provide long-term effectiveness and permanence, though re-treatment may be necessary if rebound of COC concentrations occurs after each treatment period. Because there is uncertainty as to the behavior of the geochemistry during and after treatment periods, careful monitoring of the groundwater downgradient of the treatment zones both prior to, during, and after treatment steps would be necessary to assure eventual compliance with the PRGs.

Groundwater use restrictions, implemented by the Navy and retained by any future land owner would effectively prevent the use of groundwater until PRGs are met. It is assumed that the second RAO for groundwater would be achieved after the second injection and confirmed after the fourth year of the remedy.

Reduction of Toxicity, Mobility, or Volume through Treatment

Any reduction of the toxicity, mobility, and volume of groundwater COCs under alternative GW3 would be encouraged through active treatment of the metals present. Ultimately, it is assumed that the production of the elevated metals is a side-effect of the natural bacterial reduction of petroleum released at and/or upgradient of the Site. However, it is presumed that treatment would sequester manganese, iron and cobalt within the soil that is currently mobilized in groundwater. The total mass of COCs that would be addressed is uncertain but concentrations would be monitored. No treatment residues would be generated or collected by this alternative.

Short-Term Effectiveness

Alternative GW3 would reduce human health risks in the short term because groundwater use restrictions would be implemented preventing use of groundwater for residential purposes. Exposure of workers to COCs during installation of groundwater injection wells, treatment injections, groundwater sampling, and monitoring well installation/maintenance would be minimized by compliance with OSHA requirements including wearing appropriate PPE and adherence to site-specific health and safety procedures. Implementation of LUCs and monitoring would not adversely impact the surrounding community or the environment. Since in-situ treatment for metals in groundwater has uncertain success, a pre-design pilot-

scale treatability study is anticipated to be needed to evaluate the site-specific application, which would delay the effectiveness of the treatment process and provide further reliance on LUCs in the short term.

The first groundwater RAO for preventing exposure to COCs would be achieved immediately upon implementation of LUCs and monitoring. The treatment pilot study and design would be completed in approximately six months followed by full implementation within another six months, and it is assumed that PRGs would be achieved for COCs within one month after full injections are completed. After the COCs are depleted, continued quarterly monitoring for one year would be required to identify any rebound of COCs in groundwater. It is assumed that the second RAO for groundwater would be achieved after the second injection and confirmed after the fourth year of the remedy.

Implementability

The injection systems can be readily developed for in-situ treatment. There are a number of qualified contractors to provide both well installation and chemical injection. There are no existing encumbrances on the Site that would interfere with injection system installation or operation. Sampling and maintenance of existing monitoring wells could readily be accomplished. The administrative aspects of Alternative GW3 would be relatively simple to implement. The resources, equipment, and materials required for these activities are readily available, although there are limited electric utilities on site and these would need to be reestablished for treatment system operation. There is uncertainty associated with the distribution of chemicals injected into the subsurface because of the heterogeneity of subsurface condition; therefore, a pilot study would be warranted to assist in the full-scale design.

The LUCs would be incorporated into the existing LUC program at the base and performance of 5-year reviews can readily be accomplished.

Cost

A detailed estimate of capital and O&M cost and net present worth for Alternative GW3 is provided in Appendix C and is summarized below. The net present worth was developed for a 30-year period of performance at a 2.0 percent discount rate.

Cost Description	Estimated Cost
Capital Costs (two injections)	\$1,634,927
O&M/Long-Term Monitoring (Years 0-3)	\$115,392
O&M/Long-Term Monitoring (Year 4 and after)	\$30,787
5-Year Reviews	\$23,000/5 years
30-Year Net Present Worth	\$2,774,703

5.3 COMPARATIVE ANALYSIS OF GROUNDWATER ALTERNATIVES

A comparative analysis is conducted to evaluate the significant differences between alternatives based on the threshold and balancing criteria. This comparative analysis of groundwater alternatives is presented to address how effectively each alternative would comply with the standards listed in the guidance (USEPA, 1994). This analysis is provided below and is summarized in Table 5-8.

Overall Protection of Human Health and the Environment

Alternative GW3 would be protective of human health and the environment through active treatment of groundwater as it moves through the site. Treatment would reduce the concentrations of manganese, iron and cobalt during the treatment period until the oxidation – reduction conditions at and upgradient of the Site return to a natural steady state, presumably after the increased bacterial action addresses the historic petroleum releases at and upgradient of the Site. Until that time, no exposure would be occurring, due to the implementation and enforcement of LUCs.

Alternative GW2 would be protective of human health and the environment. Under this alternative, the levels of dissolved metals in the aquifer are expected to attenuate as the attenuation of petroleum at or upgradient of the Site concludes and the natural geochemistry of the aquifer is restored. Until that time, no exposure would be occurring, due to the implementation and enforcement of LUCs.

Alternative GW1 could, in time become protective of human health and the environment if natural attenuation is taking place, however, there would be no monitoring conducted to determine the improved condition over time. Additionally, there would be no controls in place in the short term to prevent residential use of groundwater prior to attenuation reaching the cleanup goals.

Compliance with ARARs

Alternatives GW2 and GW3 would both comply with location- and action-specific ARARs and TBCs. There are no action-specific or location-specific ARARs for alternative GW1.

Applicable chemical-specific ARARs identified in this FS are already met for the groundwater. However, the EPA health advisory which is identified as a To Be Considered (TBC) EPA guidance criterion, is not met for manganese under GW-1. The criterion will eventually be achieved under both GW-2 and GW-3 based on predicted geochemical changes. It is expected that the treatment system used in GW-3 will achieve PRGs within a significantly shorter period of time (4 years – although the reduction might not be permanent) than the GW-2, MNA only, alternative (45 years).

Under all alternatives, COCs in groundwater do not exceed MCLs, non-zero MCLGs, and more stringent state groundwater standards.

Long-Term Effectiveness and Permanence

Alternative GW2 would provide effectiveness through LUCs alone, but only permanence through natural attenuation. LUCs would be effective for preventing exposure to groundwater COCs as long as the LUCs remain in place.

Alternative GW1 would not be effective, although it might provide protection from contaminants in the long term. This is because LUCs would not be present to prevent use of groundwater, and natural attenuation may occur, but it would not be identified since no monitoring would take place. Additionally, if no residential water source is established, there would be no exposure to the COCs. Although COC concentrations might eventually decrease to PRG levels through natural attenuation, no monitoring or inspections would be conducted to verify this possibility.

Alternatives GW2 and GW3 would achieve the first groundwater RAO immediately upon implementation of LUCs. The second RAO for groundwater would be achieved after a maximum estimate of 45 years under Alternative GW2 and after 4 years under Alternative GW3, although there is uncertainty in the permanence of Alternative GW3, and additional treatment beyond that already identified in this FS may be required under this alternative.

Reduction in Toxicity, Mobility, or Volume Through Treatment

Neither alternative GW1 nor GW2 provides reduction of toxicity, mobility, or volume of waste through treatment, as no active treatment is proposed. Reduction of COC mobility and volume in groundwater through natural attenuation is anticipated; however, under Alternative GW1, this reduction would not be verified or quantified. Alternative GW3 will reduce toxicity, mobility, and volume of COCs through in-situ bioprecipitation.

Short-Term Effectiveness

Implementation of Alternative GW1 would not result in risks to site workers or adversely impact the surrounding community or environment because no remedial activities would be performed.

Alternatives GW2 and GW3 would achieve the first groundwater RAO immediately upon implementation of LUCs. The second RAO for groundwater would be achieved after a maximum of 45 years under Alternative GW2 and after 4 years under Alternative GW3, although there is uncertainty in the permanence of Alternative GW3, and additional treatment beyond that already identified in this FS may be required under this alternative.

Implementation of GW2 and GW3 would have low risk to site workers during the installation and/or sampling of groundwater monitoring well and injection well through contact with contaminated groundwater. These risks would be minimized through the use of PPE and safe work practices.

Implementability

Alternative GW1 would be easiest to implement in a technical sense because no action is required.

Alternative GW2 would be easily implemented because it would include only minimal, if any, construction effort (e.g., potential new monitoring wells) and because of the relative simplicity and ease of conducting a long-term monitoring program. Administrative, management, and operational issues, and coordination with other agencies or acquiring permits under this alternative are easily achievable, as well. It should be noted that a design step will be needed to determine appropriate MNA monitoring points and parameters. Future remedial actions would not be hindered by this alternative.

Alternative GW3 would be difficult to implement as there is no documented groundwater plume that can be targeted for treatment. It is assumed that further study would be required to map groundwater flow and geochemical conditions at the Site so that the treatment system can be properly designed and constructed for optimum operation.

Cost

Capital, O&M, and present worth costs for the groundwater alternatives for DU 4-1 at Tank Farm 4 are summarized below. It is also noted that under alternative GW1, the no action alternative, a nominal cost would be incurred to address the Site in the facility 5-year review.

Cost Description	Alternative GW1 No Action	Alternative GW2 Monitored Natural Attenuation, Land Use Controls and Inspections	Alternative GW3 In-Situ Treatment, Long- Term Monitoring, Land Use Controls and Inspections
Capital	\$0	\$82,281	\$1,634,927
O&M/ Long-Term Monitoring	\$0	\$115,392 (years 1 and 2); \$30,787 (years 3-30)	\$115,392 (years 0-3); \$30,787 (years 4-30)
5-Year Reviews	\$0*	\$25,300/5 years*	\$23,000/5 years*
Present Worth	\$0	\$1,044,946	\$2,774,703

* 5-Year Reviews at this DU are a component of the Newport facility 5-Year Reviews.

TABLES

**TABLE 2-1
CHEMICAL-SPECIFIC ARARs AND TBCs
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Federal				
EPA Human Health Assessment Cancer Slope Factors (CSFs)	None	To Be Considered	These are guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	Used to compute the individual incremental cancer risk resulting from exposure to carcinogenic contaminants in site media.
Reference Dose (RfD)	None	To Be Considered	Guidance used to compute human health hazard resulting from exposure to non-carcinogens in site media.	Used to calculate potential non-carcinogenic hazards caused by exposure to contaminants in site media.
Guidelines for Carcinogen Risk Assessment	EPA/630/P-03/001F (March 2005)	To Be Considered	Guidance for assessing cancer risk.	Used to calculate potential carcinogenic risks caused by exposure to contaminants in site media.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA/630/R-03/003F (March 2005)	To Be Considered	Guidance of assessing cancer risks to children.	Used to calculate potential carcinogenic risks to children caused by exposure to contaminants in site media.
Safe Drinking Water Act, National Primary Drinking Water Regulations - Maximum Contaminant Levels (MCLs)	40 Code of Federal Regulations (CFR) 141 Subpart G	Applicable	Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies that are potential drinking water sources.	MCLs were used in the development of PRGs, based on the use of the groundwater for residential purposes.
Safe Drinking Water Act, National Primary Drinking Water Regulations - Maximum Contaminant Level Goals (MCLGs)	40 CFR 141 Subpart F	Applicable (non-zero MCLGs only)	Establishes maximum contaminant level goals (MCLGs) for public water supplies. MCLGs are health goals for drinking water sources. These unenforceable health goals are available for a number of organic and inorganic compounds.	MCLGs were considered in development of PRGs based on the use of the groundwater for residential purposes. (The MCLG of arsenic is zero.)

**TABLE 2-1
CHEMICAL-SPECIFIC ARARs AND TBCs
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Federal (continued)				
Drinking Water Health Advisory for Manganese (EPA Office of Drinking Water), 2004	-	To Be Considered	Health Advisories are estimates of risk from consumption of contaminated drinking water. They consider non-carcinogenic effects only. To be considered for contaminants in groundwater that may be used for drinking water where the standard is more conservative than either federal or state statutory or regulatory standards. The Health Advisory standard for manganese is 0.3 ppm.	Health advisory will be used to evaluate the non-carcinogenic risk resulting from exposure to manganese.
State				
State of Rhode Island Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Short Title: Remediation Regulations)	Code of Rhode Island Rules (CRIR) 12-180-001, DEM-DSR-01-93, Section 8.02, and 8.03 (with the exception of 8.02A(iv)-TPH)	Applicable	These regulations set remediation standards for contaminated media. These standards are applicable to a CERCLA remedy when they are more stringent than federal standards. Establishes criteria for groundwater and both direct contact and leachability of contaminants in soil.	Soil DEC's and Leachability Criteria were used in the development of PRGs for soil. Groundwater criteria that are more stringent than federal criteria were considered in development of PRGs based on the use of the groundwater for residential purposes.

**TABLE 2-2
LOCATION-SPECIFIC ARARs AND TBCs
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Federal				
Floodplain Management and Protection of Wetlands	44 Code of Federal Regulations (CFR) 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988 Floodplain Management and Executive Order 11990, Protection of Wetlands.	Remedial alternatives conducted within the 100-year floodplain or within federal jurisdictional wetlands and aquatic habitats will be implemented in compliance with these standards. During the remedial design stage, the effects of soil remedial actions on federal jurisdictional wetlands will be evaluated. All practicable means will be used to minimize harm to the wetlands. Wetlands disturbed by soil remediation will be mitigated in accordance with requirements. Remedial activities will take place in or near floodplains. Public comment will be solicited in the Proposed Plan.
Clean Water Act	Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, 40 CFR 230	Applicable	These regulations outline the requirements for the discharge of dredged or fill materials into surface waters including Federal jurisdictional wetlands. No activity that impacts waters of the United States shall be permitted if a practicable alternative that has less adverse impact exists. If there is no other practicable alternative, the impacts must be mitigated.	Remedial activities that have the potential to impact nearby wetlands will be designed to avoid wetlands and any adverse impacts will be mitigated.

**TABLE 2-2
 LOCATION-SPECIFIC ARARs AND TBCs
 DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
State				
Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act - RIGL 2-1-18 <i>et seq.</i>	Rhode Island Freshwater Wetlands Act, RIGL 2-1-18 <i>et seq.</i>	Applicable	Defines and establishes provisions for the protection of Rhode Island jurisdictional wetlands (including area of land within 50 feet of the edge of the wetland). Actions required to prevent the undesirable drainage, excavation, filling, alteration, encroachment or any other form of disturbance or destruction to a wetland.	Part of the Site is a freshwater wetland area and applicable freshwater wetland requirements will be met during the remedial action.

**TABLE 2-3
ACTION-SPECIFIC ARARs AND TBCs
DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Federal				
EPA Groundwater Protection Strategy	August 1984; NCP Preamble, Vol. 55, No. 46, March 8, 1990, 40 CFR 300, p. 8733); Guidelines for Ground-Water Classification (November 1986)	To Be Considered	The Groundwater Protection Strategy provides a common reference for preserving clean groundwater and protecting the public health from the effects of past contamination. Guidelines for consistency in groundwater protection programs focus on the highest beneficial use of a groundwater aquifer.	Guidance standards will be met since groundwater alternatives will be required to achieve federal drinking water standards, federal risk-based standards, or more stringent state groundwater standards, and/or risk-based standards in the groundwater.
Clean Water Act, National Recommended Water Quality Criteria (NRWQC)	40 CFR 122.44	Applicable	Federal NRWQCs are health-based and ecologically-based criteria developed for carcinogenic and non-carcinogenic compounds.	No direct discharges are expected from the Site remedial activities. However, if there are discharges (such as accumulated rainwater), water quality standards will be used to develop surface water quality monitoring standards for soil remedial alternatives at the Site.
Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites	OSWER Directive 9200.4-17P (April 21, 1999)	To Be Considered	EPA guidance regarding the use of monitored natural attenuation for the cleanup of contaminated soil and groundwater. In particular, a reasonable timeframe is defined as achieving cleanup standards though monitored attenuation would be comparable to what could be achieved through active restoration.	The monitored natural attenuation component of any groundwater alternative will only meet these standards if natural attenuation will attain all groundwater cleanup standards within a reasonable timeframe.
Underground Injection Control (UIC)	40 CFR Sections 144, 146 and 147.2000	Applicable	These regulations address the discharge of wastes, chemicals or other substances into the subsurface. The federal UIC program designates injection wells incidental to aquifer remediation as Class V wells.	These regulations apply to underground injection of treatment substances

**TABLE 2-3
ACTION-SPECIFIC ARARs AND TBCs
DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
State				
Clean Air Act - Fugitive Dust Control	RIGL 23-23 <i>et seq.</i> ; CRIR 12-31-05	Applicable	Requires that reasonable precaution be taken to prevent particulate matter from becoming airborne.	Removal and temporary storage of soil would be performed to prevent material from becoming airborne, such as by water sprays.
Clean Air Act - Emissions Detrimental to Persons or Property	RIGL 23-23 <i>et seq.</i> ; CRIR 12-31-07	Applicable	Prohibits emissions of contaminants which may be injurious to humans, plant or animal life, or cause damage to property, or reasonably interfere with the enjoyment of life and property.	Removal and temporary storage of soil would be performed to prevent material from becoming airborne. Monitoring of air emissions during removal will be used to assess compliance with the standard.
Soil Erosion and Sediment Control Handbook, 1989	-	To Be Considered	Identifies soil erosion and sediment control (E & SC) requirements for construction activities involving land-disturbance activities.	E & SCs will be used during soil disturbance activities, such as excavation.
Standards for Identification and Listing of Hazardous Waste	Rules and Regulations for Hazardous Waste Management, Code of Rhode Island Rules (CRIR), 12-030-003, Rule 5.8	Applicable	Rhode Island is delegated to administer the federal RCRA statute through its state regulations. Defines the listed and characteristic hazardous wastes.	These regulations apply to all waste generated during actions at the Site, such as excavated soil, and will be used when determining whether or not a solid waste is hazardous. The soil is not expected to be hazardous.

**TABLE 2-3
ACTION-SPECIFIC ARARs AND TBCs
DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
State				
Standards for Generators of Hazardous Waste	Rules and Regulations for Hazardous Waste Management, CRIR 12-030-003, Rule 5.2, 5.3, 5.4 and 5.8	Applicable	Establishes accumulation, manifesting, and pre-transport requirements for hazardous waste.	These regulations would apply to any waste generated at the Site that is determined to be hazardous, such as excavated soil. The soil is not expected to be hazardous.
Drilling of Drinking Water Wells; Rules and Regulations Governing the Enforcement of Chapter 46-13.2 Relating to the Drilling of Drinking Water Wells	Rule 7.01	Applicable	Prohibits installing drinking water wells near pollution sources or potential contamination sources.	Under these standards, drinking water wells are prohibited near pollution sources or potential contamination sources until groundwater cleanup standards are achieved.
Rules and Regulations for Groundwater Quality (Well Standards) – Appendix 1	-	Applicable	Identifies the standards and specification that must be followed for the installation or abandonment of monitoring wells.	Applies to the abandonment of existing monitoring wells.
Injection Control Regulation	Underground Injection Control Program Rules and Regulations	Applicable	Establishes a State Underground Injection Control Program consistent with federal requirement to preserve the quality of the groundwater of the state.	These regulations apply to underground injection of treatment substances .

TABLE 2-4
SELECTION OF PRGs
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Contaminant of Potential Concern (COPC) (mg/kg)	Site Data ⁽¹⁾				Candidate PRGs					Background ⁽³⁾		Surface Soil		Subsurface Soil	
	Surface Soil (0-1 foot)		All Soil (0-10 feet)		Risk-Based PRGs ⁽²⁾		ARAR-Based PRGs			Surface Soil	Subsurface Soil	Selected PRGs	Comment	Selected PRGs	Comment
	Concentration	FOD	Concentration	FOD	Cancer	Non-Cancer	RIDEM DEC	RIDEM LC	EPA						
Residential Use Scenario															
benzo(a)anthracene	24.7	21/24	6	36/66	0.15	NA	0.9	NA	NA	0.077	NA	0.15		0.15	
benzo(a)pyrene	11	21/24	2.7	35/66	0.015	NA	0.4	240	NA	0.089	NA	0.089	5	0.015	
benzo(b)fluoranthene	22.4	22/24	5.5	37/66	0.15	NA	0.9	NA	NA	0.122	NA	0.15		0.15	
benzo(g,h,i)perylene	3.9	21/24	0.96	33/66	NA	NA	0.8	NA	NA	0.097	NA	0.8		0.8	
benzo(k)fluoranthene	8.7	21/24	2.1	34/66	1.5	NA	0.9	NA	NA	0.098	NA	0.9		0.9	
chrysene	2.7	21/24	6.6	36/66	NA	NA	0.4	NA	NA	0.113	NA	0.4		0.4	
dibenzo(a,h)anthracene	1.8	14/24	0.19	20/66	0.015	NA	0.4	NA	NA	NA	NA	0.015		0.015	
fluoranthene	38	22/24	9.2	38/66	NA	NA	20	NA	NA	0.156	NA	20		NA	6
indeno(1,2,3-cd)pyrene	3.9	21/24	0.72	32/66	0.15	NA	0.9	NA	NA	0.111	NA	0.15		0.15	
pyrene	39.4	22/24	9.5	37/66	NA	NA	13	NA	NA	0.142	NA	13		NA	6
benzo(a)pyrene equivalents	NA	22/24	NA	38/66	NA	NA	NA	NA	NA	NA	NA	NA	6	NA	6
1,2,3,4,6,7,8,9-OCDD	NA ⁽⁴⁾	24/24	NA ⁽⁴⁾	47/47	NA	NA	NA	NA	NA	NA	NA	NA	6	NA	6
2,3,7,8-TCDD TEQs	0.0000031	24/24	0.0000027	47/47	NA	NA	NA	NA	NA	NA	NA	NA	6	NA	4,6
arsenic	15.8	24/24	19.2	66/66	0.39	22	7	NA	NA	19	24	19	5	24	5
beryllium	0.42	24/24	0.39	66/66	NA	NA	1.5	0.6 ⁽⁹⁾	NA	0.58	0.63	NA	6	NA	6
cobalt	13.3	24/24	19.1	66/66	NA	NA	NA	NA	NA	9.6	17	NA	6	NA	6
iron	33452	24/24	41025	66/66	NA	NA	NA	NA	NA	24500	38600	NA	6	NA	6
manganese	453	24/24	1065	66/66	NA	NA	390	NA	NA	360	1030	390		1030	5
thallium	3.3	6/24	2.2	16/66	NA	NA	5.5	0.1 ⁽⁹⁾	NA	NA	NA	NA	6,9	NA	6
Extractable Petroleum Hydrocarbons	NA	13/18	NA	22/48	NA	NA	500 ⁽⁷⁾	NA	NA	NA	NA	NA	7	NA	7
Industrial Use Scenario															
benzo(a)anthracene	24.7	21/24	6	36/66	NA	NA	7.8	NA	NA	0.077	NA	7.8		NA	6
benzo(a)pyrene	11	21/24	2.7	35/66	NA	NA	0.8	240	NA	0.089	NA	0.8		0.8	
benzo(b)fluoranthene	22.4	22/24	5.5	37/66	NA	NA	7.8	NA	NA	0.122	NA	7.8		NA	6
benzo(g,h,i)perylene	3.9	21/24	0.96	33/66	NA	NA	10000	NA	NA	0.097	NA	NA	6	NA	6
benzo(k)fluoranthene	8.7	21/24	2.1	34/66	NA	NA	78	NA	NA	0.098	NA	NA	6	NA	6
chrysene	2.7	21/24	6.6	36/66	NA	NA	780	NA	NA	0.113	NA	NA	6	NA	6
dibenzo(a,h)anthracene	1.8	14/24	0.19	20/66	NA	NA	0.8	NA	NA	NA	NA	0.8		NA	6
fluoranthene	38	22/24	9.2	38/66	NA	NA	10000	NA	NA	0.156	NA	NA	6	NA	6
indeno(1,2,3-cd)pyrene	3.9	21/24	0.72	32/66	NA	NA	7.8	NA	NA	0.111	NA	NA	6	NA	6
pyrene	39.4	22/24	9.5	37/66	NA	NA	10000	NA	NA	0.142	NA	NA	6	NA	6
benzo(a)pyrene equivalents	NA	22/24	NA	38/66	NA	NA	NA	NA	NA	NA	NA	NA	6	NA	6
1,2,3,4,6,7,8,9-OCDD	NA ⁽⁴⁾	24/24	NA ⁽⁴⁾	47/47	NA	NA	NA	NA	NA	NA	NA	NA	6	NA	6
2,3,7,8-TCDD TEQs	0.0000031	24/24	0.0000027	47/47	NA	NA	NA	NA	NA	NA	NA	NA	4,6	NA	4,6
arsenic	16	24/24	19.2	66/66	NA	NA	7	NA	NA	19	24	19	5	24	5
beryllium	0.42	24/24	0.39	66/66	NA	NA	1.5	0.6 ⁽⁹⁾	NA	0.58	0.63	NA	6	NA	6
cobalt	13	24/24	19.1	66/66	NA	NA	NA	NA	NA	9.6	17	NA	6	NA	6
iron	33452	24/24	41025	66/66	NA	NA	NA	NA	NA	24500	38600	NA	6	NA	6
manganese	453	24/24	1065	66/66	NA	585	10000	NA	NA	360	1030	NA	6	1030	5
thallium	3.3	6/24	2.2	16/66	NA	NA	140	0.1 ⁽⁹⁾	NA	NA	NA	NA	6	NA	6
Extractable Petroleum Hydrocarbons	NA	13/18	NA	22/48	NA	NA	2500 ⁽⁷⁾	NA	NA	NA	NA	NA	7	NA	7

TABLE 2-4
SELECTION OF PRGs
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Notes:

PRG Selection was conducted as follows: The lowest candidate PRG value was compared to the Site concentration (surface and subsurface); if the Site concentration exceeded the lowest candidate PRG, that value was selected as the PRG and then adjusted to background, if background data was available.

Bold - parameters are COPCs that were retained as COCs through the HHRA in the Data Gaps Assessment Report. Other COCs were identified as exceeding State Criteria, or included by regulatory request.

FOD - Frequency of Detection

DEC - RIDEM Direct Exposure Criteria

LC - RIDEM Leachability Criteria

NA - not applicable

(1) EPCs used to represent Site data are presented in Tables 3.1 (Surface Soil) and 3.2 (All Soil) [RME] of Appendix H-2 of the Data Gaps Assessment Report. Site Concentration is 95% UCLs calculated in the Data Gaps Assessment Report.

(2) Risk-based PRGs are calculated and presented in Appendix B of this FS report.

(3) Background data 95% UPLs are presented for combined background soils, refer to Appendix B, Attachment B2

(4) Dioxin-like congeners are evaluated together as a toxicity equivalency quotient (TEQ)

(5) PRG adjusted based on background

(6) Compound does not pose risk* (see * below) and does not exceed any ARAR.

(7) PRGs are not calculated for TPH under CERCLA

(8) Subsurface Soil PRGs for industrial use soil are applicable only to the 0-2 foot interval

(9) Leachability criteria for metals in soil are minimum concentrations that could provide an exceedance of the aqueous criteria provided in RIDEM Regulations; they do not reflect actual conditions.

* Risk: Cancer risk exceeding 1E-6, or non-cancer risk exceeding hazard quotient of 1

**TABLE 2-5
EXCEEDANCES OF SOIL PRGs
DU 4-1 AT SITE 12, TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT RHODE ISLAND
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PRG TYPE			RESIDENTIAL USE SCENARIO								
UNITS			MG/KG		UG/KG						
PARAMETER			ARSENIC	MANGANESE	BENZO(A) ANTHRACENE	BENZO(A) PYRENE	BENZO(B) FLUORANTHENE	BENZO(G,H,I) PERYLENE	BENZO(K) FLUORANTHENE	CHRYSENE	DIBENZO(A,H) ANTHRACENE
SURFACE SOIL PRG			19	390	150	89	150	800	900	400	15
SUBSURFACE SOIL PRG			24	1030	150	15	150	800	900	400	15
LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)									
TF4-SB920	0	1	8.4 J	558 J	160	130	210	72	210	160	34
	2	4	6.5 J	471 J	3.9	3.3 U	3.3 U	3.3 U	3.3 U	4.3	3.3 U
	8	10	9 J	729 J	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
TF4-SB921	0	1	10.2 J	293 J	150	130	170	98	180	140	47
	2	4	20.2 J	775 J	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
	8	10	10.6 J	332	3.9 U	3.9 U	3.9 UJ	3.9 U	3.9 U	3.9 U	3.9 U
TF4-SB922	0	1	6.7 J	439	29	34 J	60 J	28	21	32	7.1 J
	2	4	10.8 J	335	29	36.5 J	64 J	30.5	21.5	36	8.45 J
	6	8	20 J	318	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 UJ
TF4-SB923	0	1	13.7 J	583	94	130 J	170 J	110	130	150	25 J
	2	4	13.3 J	314	8	5.9 J	9.2 J	5.2 U	7.2	8.1	5.2 UJ
	4	6	18.9 J	1020	10	9.3 J	13 J	8	10	11	4.7 UJ
TF4-SB924	0	1	8.2 J	501	130	120 J	190 J	84	83	130	24 J
	2	4	13.5 J	914 J	64 J	65 J	120 J	44	27 J	79 J	12 J
	8	10	9.25 J	2740 J	3.9 U	3.9 UJ	3.9 UJ	3.9 U	3.9 U	3.9 U	3.9 UJ
TF4-SB925	0	1	6.7 J	144	17	15 J	27 J	13	17	19	4.8 U
	2	4	10.6 J	3420	4.1 U	4.1 U	4.1 UJ	4.1 U	4.1 U	4.1 U	4.1 U
	6	8	16.5 J	694	4 U	4 U	4 UJ	4 U	4 U	4 U	4 U
TF4-SB926	0	1	15.4	255	110	150 J	220 J	120	130	150	29 J
	2	4	11.1 J	156	3.95	3.3 J	7.5 J	5.1	5.25	4.7	4.05 UJ
	4	6	13.4 J	200	8.6	8.4 J	17 J	6.3	3.9 U	9.9	3.9 UJ

BLUE SHADING - RESULT IS < PRG, YELLOW SHADING - RESULT IS BETWEEN 1 AND 10 TIMES PRG, RED SHADING -
RESULT IS BETWEEN 10 AND 100 TIMES PRG, PURPLE SHADING - RESULT IS > 100 TIMES THE PRG

**TABLE 2-5
EXCEEDANCES OF SOIL PRGs
DU 4-1 AT SITE 12, TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT RHODE ISLAND
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PRG TYPE			RESIDENTIAL USE SCENARIO								
UNITS			MG/KG		UG/KG						
PARAMETER			ARSENIC	MANGANESE	BENZO(A) ANTHRACENE	BENZO(A) PYRENE	BENZO(B) FLUORANTHENE	BENZO(G,H,I) PERYLENE	BENZO(K) FLUORANTHENE	CHRYSENE	DIBENZO(A,H) ANTHRACENE
SURFACE SOIL PRG			19	390	150	89	150	800	900	400	15
SUBSURFACE SOIL PRG			24	1030	150	15	150	800	900	400	15
LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)									
TF4-SB927	0	1	13.3 J	209	48	40 J	67 J	47	30	53	16 J
TF4-SB928	0	1	9.2 J	368	160	130	230 J	86	170 J	180	24 J
	2	4	5.3 J	469	57	56	93 J	46	62 J	62	13 J
	8	10	10.9 J	502	3.8 U	3.8 U	3.8 U	3.8 U	3.8 UJ	3.8 U	3.8 UJ
TF4-SB929	0	1	8.5 J	354	28	31 J	79 J	17	48	57	6
	2	4	27.8 J	1440	10.4	11.5 J	34 J	5.75	18.5	21	3.8 U
	6	8	31.5 J	1010	3.8 U	3.8 U	3.8 UJ	3.8 U	3.8 U	3.8 U	3.8 U
TF4-SB930	0	1	8.6 J	237	13	13 J	19 J	11	18	16	4.3 U
	2	4	8.3 J	4480	6.5	8.3 J	14 J	7.6	9.6	13	4.8 U
	6	8	9 J	441	4.1 U	4.1 U	4.1 UJ	4.1 U	4.1 U	4.1 U	4.1 U
TF4-SB931	0	1	14.6 J	249 J	180	230 J	320 J	190	260	270	48 J
TF4-SB932	0	1	4.2 J	149	3.9 U	3.9 U	4.3 J	3.9 U	3.9 U	3.9 U	3.9 UJ
	2	4	24.1 J	303	3.6 U	3.6 U	3.6 UJ	3.6 U	3.6 U	3.6 U	3.6 U
	6	7	42.9 J	734	3.9 U	3.9 U	3.9 UJ	3.9 U	3.9 U	3.9 U	3.9 U

BLUE SHADING - RESULT IS < PRG, YELLOW SHADING - RESULT IS BETWEEN 1 AND 10 TIMES PRG, RED SHADING -
RESULT IS BETWEEN 10 AND 100 TIMES PRG, PURPLE SHADING - RESULT IS > 100 TIMES THE PRG

**TABLE 2-5
EXCEEDANCES OF SOIL PRGs
DU 4-1 AT SITE 12, TANK FARM 4, FEASIBILITY STUDY
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PRG TYPE			RESIDENTIAL USE SCENARIO								
UNITS			MG/KG		UG/KG						
PARAMETER			ARSENIC	MANGANESE	BENZO(A) ANTHRACENE	BENZO(A) PYRENE	BENZO(B) FLUORANTHENE	BENZO(G,H,I) PERYLENE	BENZO(K) FLUORANTHENE	CHRYSENE	DIBENZO(A,H) ANTHRACENE
SURFACE SOIL PRG			19	390	150	89	150	800	900	400	15
SUBSURFACE SOIL PRG			24	1030	150	15	150	800	900	400	15
LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)									
TF4-SB933	0	1	11.3 J	238	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 UJ
	2	4	4.9 J	120	3.8 U	3.8 U	3.8 UJ	3.8 U	3.8 U	3.8 U	3.8 U
	6	8	34.4 J	1850	3.9 U	3.9 U	3.9 UJ	3.9 U	3.9 U	3.9 U	3.9 U
TF4-SB934	0	1	9.3 J	453	54000	24000	49000	8500	19000	59000	3900 J
	2	4	6.8 J	306	320 J	250 J	610 J	100 J	490	440	46
	8	10	28.2	573	3.6 U	3.6 U	4.2 J	3.6 U	3.6 U	3.6 U	3.6 U
TF4-SB935	0	1	6.9	467	14	13	24 J	8.2	11	21	3.7 U
	2	4	9.1	410	6.5	5.7	9.7 J	4.2	5.8	9.6	3.6 U
	8	10	8	287	3.7 U	3.7 U	3.7 UJ	3.7 U	3.7 U	3.7 U	3.7 U
TF4-SB936	0	1	9.3 J	762	29	31	53 J	24	20 J	33	6.4 J
	2	4	10.1 J	402	3.7 U	3.7 U	3.7 U	3.7 U	3.7 UJ	3.7 U	3.7 UJ
	8	10	7.2	775	3.9 U	3.9 U	3.9 UJ	3.9 UJ	3.9 U	3.9 U	3.9 UJ
TF4-SB937	0	1	8.2 J	227	19	25 J	41 J	22	19	29	6.4 U
	2	4	9.4 J	143	7	5.7 J	9.2 J	4.4 U	4.8	6.2	4.4 U
TF4-SB938	0	1	14.7 J	335 J	8.2	8.5	14	7.5	10	12	3.3 U
	2	4	20.9 J	240 J	3.5 U	3.5 U	3.5 UJ	3.5 U	3.5 U	3.5 U	3.5 U
	8	10	18 J	58.3 J	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U

BLUE SHADING - RESULT IS < PRG, YELLOW SHADING - RESULT IS BETWEEN 1 AND 10 TIMES PRG, RED SHADING -
RESULT IS BETWEEN 10 AND 100 TIMES PRG, PURPLE SHADING - RESULT IS > 100 TIMES THE PRG

**TABLE 2-5
EXCEEDANCES OF SOIL PRGs
DU 4-1 AT SITE 12, TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT RHODE ISLAND
PAGE 4 OF 8**

PRG TYPE			RESIDENTIAL USE SCENARIO								
UNITS			MG/KG		UG/KG						
PARAMETER			ARSENIC	MANGANESE	BENZO(A) ANTHRACENE	BENZO(A) PYRENE	BENZO(B) FLUORANTHENE	BENZO(G,H,I) PERYLENE	BENZO(K) FLUORANTHENE	CHRYSENE	DIBENZO(A,H) ANTHRACENE
SURFACE SOIL PRG			19	390	150	89	150	800	900	400	15
SUBSURFACE SOIL PRG			24	1030	150	15	150	800	900	400	15
LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)									
TF4-SB939	0	1	7.2 J	334 J	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
	2	4	10 J	342 J	150 J	200 J	320 J	180 J	83 J	190 J	43 J
	8	10	34.7 J	186 J	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
TF4-SB940	0	1	6 J	351 J	17	15	23	10	15	21	3.8
	2	4	18.9 J	396 J	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
	8	10	6.5 J	364 J	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
TF4-SB941	0	1	11.3	459	16	15	27 J	12	11 J	17	4.4 UJ
	2	4	8.5 J	282	3.8 UJ	3.8 UJ	3.8 UJ	3.8 UJ	3.8 UJ	3.8 UJ	3.8 UJ
	8	10	29.5	382	3.85 UJ	3.85 UJ	3.85 UJ	3.85 UJ	3.85 UJ	3.85 UJ	3.85 UJ
TF4-SB942	0	1	10.8 J	591	120	140 J	220 J	100	71	130	29 J
	2	4	11.3 J	391	28	29 J	37 J	21	27	36	5.6 J
TF4-SB943	0	1	59.5	818	14	10	21 J	6	7.4 J	14	3.6 UJ
	2	4	10.6 J	2410	4 U	4 U	4 U	4 U	4 UJ	4 U	4 UJ
	8	10	6.4 J	1740	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U

BLUE SHADING - RESULT IS < PRG, YELLOW SHADING - RESULT IS BETWEEN 1 AND 10 TIMES PRG, RED SHADING -
RESULT IS BETWEEN 10 AND 100 TIMES PRG, PURPLE SHADING - RESULT IS > 100 TIMES THE PRG

**TABLE 2-5
EXCEEDANCES OF SOIL PRGs
DU 4-1 AT SITE 12, TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT RHODE ISLAND
PAGE 5 OF 8**

PRG TYPE			RESIDENTIAL				INDUSTRIAL				
UNITS			UG/KG			MG/KG		UG/KG			
PARAMETER			FLUORANTHENE	INDENO(1,2,3- CD) PYRENE	PYRENE	ARSENIC	MANGANESE	BENZO(A) ANTHRACENE	BENZO(A) PYRENE	BENZO(B) FLUORANTHENE	DIBENZO(A,H) ANTHRACENE
SURFACE SOIL PRG			20000	150	13000	19		7800	800	7800	800
SUBSURFACE SOIL PRG				150		24	1030		800		
LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)									
TF4-SB920	0	1	160	72	150	8.4 J	558 J	160	130	210	34
	2	4	4.4	3.3 U	4.9 J	6.5 J	471 J	3.9	3.3 U	3.3 U	3.3 U
	8	10	3.3 U	3.3 U	3.3 U	9 J	729 J	3.3 U	3.3 U	3.3 U	3.3 U
TF4-SB921	0	1	210	87	210	10.2 J	293 J	150	130	170	47
	2	4	3.3 U	3.3 U	3.3 U	20.2 J	775 J	3.3 U	3.3 U	3.3 U	3.3 U
	8	10	3.9 U	3.9 UJ	3.9 U	10.6 J	332	3.9 U	3.9 U	3.9 UJ	3.9 U
TF4-SB922	0	1	57	25 J	48	6.7 J	439	29	34 J	60 J	7.1 J
	2	4	53.5	27.5 J	47	10.8 J	335	29	36.5 J	64 J	8.45 J
	6	8	6.1 U	6.1 UJ	6.1 U	20 J	318	6.1 U	6.1 U	6.1 U	6.1 UJ
TF4-SB923	0	1	220	90 J	190	13.7 J	583	94	130 J	170 J	25 J
	2	4	10	5.2 UJ	9.5	13.3 J	314	8	5.9 J	9.2 J	5.2 UJ
	4	6	14	6.8 J	13	18.9 J	1020	10	9.3 J	13 J	4.7 UJ
TF4-SB924	0	1	230	74 J	200	8.2 J	501	130	120 J	190 J	24 J
	2	4	140 J	36 J	120 J	13.5 J	914 J	64 J	65 J	120 J	12 J
	8	10	3.9 U	3.9 UJ	3.9 U	9.25 J	2740 J	3.9 U	3.9 UJ	3.9 UJ	3.9 UJ
TF4-SB925	0	1	33	11 J	29	6.7 J	144	17	15 J	27 J	4.8 U
	2	4	4.1 U	4.1 UJ	4.1 U	10.6 J	3420	4.1 U	4.1 U	4.1 UJ	4.1 U
	6	8	4 U	4 UJ	4 U	16.5 J	694	4 U	4 U	4 UJ	4 U
TF4-SB926	0	1	240	110 J	200	15.4	255	110	150 J	220 J	29 J
	2	4	7.8	3.3 J	6.35	11.1 J	156	3.95	3.3 J	7.5 J	4.05 UJ
	4	6	17	5.8 J	17	13.4 J	200	8.6	8.4 J	17 J	3.9 UJ

BLUE SHADING - RESULT IS < PRG, YELLOW SHADING - RESULT IS BETWEEN 1 AND 10 TIMES PRG, RED SHADING -
RESULT IS BETWEEN 10 AND 100 TIMES PRG, PURPLE SHADING - RESULT IS > 100 TIMES THE PRG

**TABLE 2-5
EXCEEDANCES OF SOIL PRGs
DU 4-1 AT SITE 12, TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT RHODE ISLAND
PAGE 6 OF 8**

PRG TYPE			RESIDENTIAL				INDUSTRIAL				
UNITS			UG/KG			MG/KG		UG/KG			
PARAMETER			FLUORANTHENE	INDENO(1,2,3- CD) PYRENE	PYRENE	ARSENIC	MANGANESE	BENZO(A) ANTHRACENE	BENZO(A) PYRENE	BENZO(B) FLUORANTHENE	DIBENZO(A,H) ANTHRACENE
SURFACE SOIL PRG			20000	150	13000	19		7800	800	7800	800
SUBSURFACE SOIL PRG				150		24	1030		800		
LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)									
TF4-SB927	0	1	68	33 J	59	13.3 J	209	48	40 J	67 J	16 J
TF4-SB928	0	1	290	75 J	240	9.2 J	368	160	130	230 J	24 J
	2	4	100	38 J	86	5.3 J	469	57	56	93 J	13 J
	8	10	3.8 U	3.8 UJ	3.8 U	10.9 J	502	3.8 U	3.8 U	3.8 U	3.8 UJ
TF4-SB929	0	1	52	18 J	47	8.5 J	354	28	31 J	79 J	6
	2	4	11.5	7.1 J	11	27.8 J	1440	10.4	11.5 J	34 J	3.8 U
	6	8	3.8 U	3.8 UJ	3.8 U	31.5 J	1010	3.8 U	3.8 U	3.8 UJ	3.8 U
TF4-SB930	0	1	26	10 J	22	8.6 J	237	13	13 J	19 J	4.3 U
	2	4	17	6.7 J	15	8.3 J	4480	6.5	8.3 J	14 J	4.8 U
	6	8	4.1 U	4.1 UJ	4.1 U	9 J	441	4.1 U	4.1 U	4.1 UJ	4.1 U
TF4-SB931	0	1	470	180 J	350	14.6 J	249 J	180	230 J	320 J	48 J
TF4-SB932	0	1	5.1	3.9 UJ	4.4	4.2 J	149	3.9 U	3.9 U	4.3 J	3.9 UJ
	2	4	3.6 U	3.6 UJ	3.6 U	24.1 J	303	3.6 U	3.6 U	3.6 UJ	3.6 U
	6	7	3.9 U	3.9 UJ	3.9 U	42.9 J	734	3.9 U	3.9 U	3.9 UJ	3.9 U

BLUE SHADING - RESULT IS < PRG, YELLOW SHADING - RESULT IS BETWEEN 1 AND 10 TIMES PRG, RED SHADING -
RESULT IS BETWEEN 10 AND 100 TIMES PRG, PURPLE SHADING - RESULT IS > 100 TIMES THE PRG

**TABLE 2-5
EXCEEDANCES OF SOIL PRGs
DU 4-1 AT SITE 12, TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT RHODE ISLAND
PAGE 7 OF 8**

PRG TYPE			RESIDENTIAL				INDUSTRIAL				
UNITS			UG/KG			MG/KG		UG/KG			
PARAMETER			FLUORANTHENE	INDENO(1,2,3-CD) PYRENE	PYRENE	ARSENIC	MANGANESE	BENZO(A) ANTHRACENE	BENZO(A) PYRENE	BENZO(B) FLUORANTHENE	DIBENZO(A,H) ANTHRACENE
SURFACE SOIL PRG			20000	150	13000	19		7800	800	7800	800
SUBSURFACE SOIL PRG				150		24	1030		800		
LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)									
TF4-SB933	0	1	4.2 U	4.2 UJ	4.2 U	11.3 J	238	4.2 U	4.2 U	4.2 U	4.2 UJ
	2	4	3.8 U	3.8 UJ	3.8 U	4.9 J	120	3.8 U	3.8 U	3.8 UJ	3.8 U
	6	8	3.9 U	3.9 UJ	3.9 U	34.4 J	1850	3.9 U	3.9 U	3.9 UJ	3.9 U
TF4-SB934	0	1	83000	8500	86000	9.3 J	453	54000	24000	49000	3900 J
	2	4	160 J	130 J	200 J	6.8 J	306	320 J	250 J	610 J	46
	8	10	3.6 U	3.6 U	3.6 U	28.2	573	3.6 U	3.6 U	4.2 J	3.6 U
TF4-SB935	0	1	31	7.4	27	6.9	467	14	13	24 J	3.7 U
	2	4	13	3.6 U	11	9.1	410	6.5	5.7	9.7 J	3.6 U
	8	10	3.9	3.7 U	3.7 U	8	287	3.7 U	3.7 U	3.7 UJ	3.7 U
TF4-SB936	0	1	57	21 J	48	9.3 J	762	29	31	53 J	6.4 J
	2	4	3.7 U	3.7 UJ	3.7 U	10.1 J	402	3.7 U	3.7 U	3.7 U	3.7 UJ
	8	10	3.9 U	3.9 UJ	3.9 U	7.2	775	3.9 U	3.9 U	3.9 UJ	3.9 UJ
TF4-SB937	0	1	33	20 J	32	8.2 J	227	19	25 J	41 J	6.4 U
	2	4	11	4.4 UJ	10	9.4 J	143	7	5.7 J	9.2 J	4.4 U
TF4-SB938	0	1	14	6.4	13	14.7 J	335 J	8.2	8.5	14	3.3 U
	2	4	3.5 U	3.5 UJ	3.5 U	20.9 J	240 J	3.5 U	3.5 U	3.5 UJ	3.5 U
	8	10	3.3 U	3.3 U	3.3 U	18 J	58.3 J	3.3 U	3.3 U	3.3 U	3.3 U

BLUE SHADING - RESULT IS < PRG, YELLOW SHADING - RESULT IS BETWEEN 1 AND 10 TIMES PRG, RED SHADING -
RESULT IS BETWEEN 10 AND 100 TIMES PRG, PURPLE SHADING - RESULT IS > 100 TIMES THE PRG

**TABLE 2-5
EXCEEDANCES OF SOIL PRGs
DU 4-1 AT SITE 12, TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT RHODE ISLAND
PAGE 8 OF 8**

PRG TYPE			RESIDENTIAL				INDUSTRIAL				
UNITS			UG/KG			MG/KG		UG/KG			
PARAMETER			FLUORANTHENE	INDENO(1,2,3- CD) PYRENE	PYRENE	ARSENIC	MANGANESE	BENZO(A) ANTHRACENE	BENZO(A) PYRENE	BENZO(B) FLUORANTHENE	DIBENZO(A,H) ANTHRACENE
SURFACE SOIL PRG			20000	150	13000	19		7800	800	7800	800
SUBSURFACE SOIL PRG				150		24	1030		800		
LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)									
TF4-SB939	0	1	3.3 U	3.3 U	3.3 U	7.2 J	334 J	3.3 U	3.3 U	3.3 U	3.3 U
	2	4	310 J	140 J	310 J	10 J	342 J	150 J	200 J	320 J	43 J
	8	10	3.3 U	3.3 U	3.3 U	34.7 J	186 J	3.3 U	3.3 U	3.3 U	3.3 U
TF4-SB940	0	1	31	9.3	24	6 J	351 J	17	15	23	3.8
	2	4	3.3 U	3.3 U	3.3 U	18.9 J	396 J	3.3 U	3.3 U	3.3 U	3.3 U
	8	10	3.3 U	3.3 U	3.3 U	6.5 J	364 J	3.3 U	3.3 U	3.3 U	3.3 U
TF4-SB941	0	1	28	11 J	23	11.3	459	16	15	27 J	4.4 UJ
	2	4	3.8 UJ	3.8 UJ	3.8 UJ	8.5 J	282	3.8 UJ	3.8 UJ	3.8 UJ	3.8 UJ
	8	10	3.85 UJ	3.85 UJ	3.85 UJ	29.5	382	3.85 UJ	3.85 UJ	3.85 UJ	3.85 UJ
TF4-SB942	0	1	240	93 J	190	10.8 J	591	120	140 J	220 J	29 J
	2	4	56	19 J	49	11.3 J	391	28	29 J	37 J	5.6 J
TF4-SB943	0	1	29	5.7 J	24	59.5	818	14	10	21 J	3.6 UJ
	2	4	4 U	4 UJ	4 U	10.6 J	2410	4 U	4 U	4 U	4 UJ
	8	10	3.7 U	3.7 U	3.7 U	6.4 J	1740	3.7 U	3.7 U	3.7 U	3.7 U

BLUE SHADING - RESULT IS < PRG, YELLOW SHADING - RESULT IS BETWEEN 1 AND 10 TIMES PRG, RED SHADING -
RESULT IS BETWEEN 10 AND 100 TIMES PRG, PURPLE SHADING - RESULT IS > 100 TIMES THE PRG

**TABLE 2-6
SELECTION OF PRGs - GROUNDWATER
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT RHODE ISLAND**

Contaminant of Potential Concern (COPC)	Site Data ⁽¹⁾		Candidate PRGs (µg/L)				Selected PRGs (µg/L)	Comment
	Groundwater		Risk-Based PRGs ⁽²⁾		ARAR-Based PRGs			
	Concentration (µg/L)	FOD	Cancer	Non-Cancer	RIDEM GA	EPA MCL		
Residential Use Scenario								
naphthalene	0.19	1/7	NA	NA	100	NA	100	(3)
aluminum	253	2/7	NA	NA	NA	NA	NA	(3)
arsenic	6.3	4/7	0.039	3.3	10	10	10	(4)
cobalt	12.6	7/7	NA	3.3	NA	NA	3.3	
iron	17100	7/7	NA	10900	NA	NA	10900	
manganese	5030	7/7	NA	320	NA	300 ⁽⁵⁾	300	
Industrial Use Scenario								
None	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Bold - COPCs that were retained as Contaminants of Concern (COCs) through the Human Health Risk Assessment in the Data Gaps Assessment Report

µg/L - microgram per liter

FOD - Frequency of Detection

PRG - Preliminary Remediation Goal

MCL - EPA's Maximum Contaminant Level for drinking water

NA - not applicable

(1) The maximum concentration is cited (no 95% Upper Concentration Limit [UCL] is available)

(2) Risk-based PRGs are calculated and presented in Appendix B of this FS report

(3) Compound does not pose risk* (see below) and does not exceed any PRG

(4) Site concentration does not exceed the MCL, which is selected as the PRG over the risk-based value

(5) The EPA health advisory is presented in lieu of an enforceable standard.

* risk: Compound-specific cancer risk exceeding 1E-6, or non-cancer risk exceeding hazard quotient of 1

**TABLE 2-7
EXCEEDANCES OF GROUNDWATER PRGs
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

PRG TYPE	RESIDENTIAL USE SCENARIO		
	UG/L		
CONTAMINANT OF CONCERN (COC)	COBALT	IRON	MANGANESE
PRG	3.3	10900	300
LOCATION ID			
TF4-MW-912	12.6	12300	1110
TF4-MW-913	11.8	11000	994
TF4-MW-914	10.5	12200	882
TF4-MW-919	12.1	17100	1130
TF4-MW-920	3.8	779	5030
TF4-MW-921	11.2	10300	1120
TF4-MW-922	1.2	252	321

COLOR KEY:

Exceeds 10 x PRG
Exceeds PRG
Below PRG

**TABLE 2-8
BACKGROUND CONCENTRATIONS - SOIL
DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Compound	Soil Type	Background Concentration - 95% Upper Predictive Limit (UPL) (mg/kg)	
		Surface Soil	Subsurface Soil
Arsenic	MmA	6	5.7
	Ne	17	9.3
	Se	33	33
	PM	17	23
	Combined	19	24
Manganese	MmA	205	663
	Ne	261	448
	Se	304	1044
	PM	489	1090
	Combined	360	1030
Benzo(a)anthracene	Se	NA	NS
	PM	NA	NS
	Combined	0.077	NS
Benzo(a)pyrene	Se	NA	NS
	PM	0.083	NS
	Combined	0.089	NS
Benzo(b)fluoranthene	Se	NA	NS
	PM	0.108	NS
	Combined	0.122	NS
Benzo(k)fluoranthene	Se	NA	NS
	PM	0.0676	NS
	Combined	0.098	NS
Dibenzo(a,h)anthracene	Se	NA	NS
	PM	NA	NS
	Combined	NA	NS
Indeno(1,2,3-cd)pyrene	Se	NA	NS
	PM	NA	NS
	Combined	NA	NS

MmA - Merrimac sandy loam
 Ne - Newport silt loam
 Se - Stissing silt loam
 PM - Pittstown silt loam

NA = not applicable; there are less than four samples with detections, therefore, meaningful UPLs cannot be calculated.

NS - no sample; subsurface soil samples were not analyzed for PAHs

Background values calculated using USEPA ProUCL version 4.1 see text and Appendix B1, Attachment B

TABLE 2-9
SUMMARY OF CANCER RISKS AND HAZARD INDICES - TANK FARM 4 - EXCLUDING LOCATION SB934
REASONABLE MAXIMUM EXPOSURES
DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10 ⁻⁴	Chemicals with Cancer Risks > 10 ⁻⁵ and ≤ 10 ⁻⁴	Chemicals with Cancer Risks > 10 ⁻⁶ and ≤ 10 ⁻⁵	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Lifelong Recreational Users (Child, Adolescent, and Adults)	Surface Soil (0 - 1 Feet)	Incidental Ingestion	9E-06	--	--	Arsenic	NA	--
		Dermal Contact	1E-06	--	--	--	NA	--
		Inhalation	4E-10	--	--	--	NA	--
		Total	1E-05	--	--	Arsenic	NA	--
	All Soil (0 - 10 Feet)	Incidental Ingestion	7E-06	--	--	Arsenic	NA	--
		Dermal Contact	8E-07	--	--	--	NA	--
		Inhalation	4E-10	--	--	--	NA	--
		Total	8E-06	--	--	Arsenic	NA	--
Child Residents	Surface Soil (0 - 1 Feet)	Ingestion	5E-05	--	Arsenic	Benzo(a)pyrene	2	Target Organs HI < 1
		Dermal Contact	6E-06	--	--	Benzo(a)pyrene, Arsenic	0.08	--
		Inhalation	2E-09	--	--	--	0.001	--
		Total	5E-05	--	Arsenic	Benzo(a)pyrene	2	Target Organs HI ≤ 1
	All Soil (0 - 10 Feet)	Ingestion	4E-05	--	Arsenic	Benzo(a)pyrene	3	Target Organs HI < 1
		Dermal Contact	4E-06	--	--	Arsenic	0.1	--
		Inhalation	2E-09	--	--	--	0.002	--
		Total	4E-05	--	Arsenic	Benzo(a)pyrene	3	Target Organs HI < 1
Adult Residents	Surface Soil (0 - 1 Feet)	Ingestion	2E-05	--	Arsenic	--	0.2	--
		Dermal Contact	3E-06	--	--	Arsenic	0.01	--
		Inhalation	6E-09	--	--	--	0.001	--
		Total	2E-05	--	Arsenic	--	0.2	--
	All Soil (0 - 10 Feet)	Ingestion	1E-05	--	--	Arsenic	0.3	--
		Dermal Contact	2E-06	--	--	Arsenic	0.01	--
		Inhalation	8E-09	--	--	--	0.002	--
		Total	2E-05	--	Arsenic	--	0.3	--
Lifelong Residents (Child, Adolescent, and Adults)	Surface Soil (0 - 1 Feet)	Ingestion	6E-05	--	Arsenic	Benzo(a)pyrene	NA	--
		Dermal Contact	9E-06	--	--	Benzo(a)pyrene, Arsenic	NA	--
		Inhalation	8E-09	--	--	--	NA	--
		Total	7E-05	--	Arsenic	Benzo(a)pyrene	NA	--
	All Soil (0 - 10 Feet)	Ingestion	5E-05	--	Arsenic	Benzo(a)pyrene	NA	--
		Dermal Contact	6E-06	--	--	Arsenic	NA	--
		Inhalation	1E-08	--	--	--	NA	--
		Total	6E-05	--	Arsenic	Benzo(a)pyrene	NA	--

Notes:
NA - Not applicable.

**TABLE 3-1
PRELIMINARY SCREENING OF SOIL TECHNOLOGIES AND PROCESS OPTIONS
FEASIBILITY STUDY
DU 4-1, TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 1 OF 3**

General Response Action	Technology	Process Option	Description	Screening Comments
No Action	None	Not Applicable	No activities conducted to address contamination.	Required by National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Retain for baseline comparison.
Limited Action	Access Restrictions	Physical Barriers	Fencing, markers, and warning signs to restrict site access and communicate hazards.	Retain, in conjunction with additional controls, to limit exposure to contaminated media.
	Institutional Controls	Land Use Controls (LUCs)	Administrative action using site use prohibitions to restrict future use, activities, and digging.	Retain, in conjunction with additional controls and actions, to limit exposure to contaminated media.
	Monitoring	Groundwater Monitoring	Action to identify migration of COCs from impacted soils to groundwater so that other actions can be considered and implemented if necessary.	COCs do not appear to be leaching to groundwater. However, retain in conjunction with alternatives that leave contaminated soil in place to monitor potential future contaminant migration via groundwater.
		Physical Inspections	Action to periodically check to assure land uses have not changed over time, to assure that land alterations are not present and property remains under Navy ownership	Retain, in support of any remedy that leaves contaminants in place, either under cover systems or without.

**TABLE 3-1
PRELIMINARY SCREENING OF SOIL TECHNOLOGIES AND PROCESS OPTIONS
FEASIBILITY STUDY
DU 4-1, TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 2 OF 3**

General Response Action	Technology	Process Option	Description	Screening Comments
Containment	Impermeable Cap	Engineered Cap	Use of low permeability soil or low permeability geosynthetic barriers to minimize exposure to contaminant soil and to minimize migration of contaminants to groundwater.	Retain for further evaluation.
	Permeable Cover	Soil Cover	Use of soil material to minimize exposure to contaminated soil.	Retain for further evaluation.
Removal	Excavation	Bulk Excavation	Means for removal of contaminated soil. This technology is coupled with disposal or treatment technologies to address the disposition of excavated material.	Retain to remove limited quantities of contaminated media.
In-Situ Treatment	Thermal	Vitrification	Thermal destruction process that immobilizes soil contaminants by converting soil to a chemically inert, stable glass product.	Eliminate due to the complexity of the technology, and the high cost would not be cost effective relative to the site risks.
	Physical/Chemical	Soil Flushing	Use of water or solvents to remove contaminants from the vadose zone by leaching and collecting contaminated wastewater in the saturated zone followed by aboveground treatment.	Eliminate due to questionable effectiveness for the concentrations present and implementability concerns due to the propensity of constituents adhere to soils.
		Solidification/Stabilization	Use of pozzolanic materials in the vadose zone to chemically fix inorganics and solidify the matrix to reduce leachability.	Eliminate due to questionable effectiveness and implementability in situ.

**TABLE 3-1
 PRELIMINARY SCREENING OF SOIL TECHNOLOGIES AND PROCESS OPTIONS
 FEASIBILITY STUDY
 DU 4-1, TANK FARM 4
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
 PAGE 3 OF 3**

General Response Action	Technology	Process Option	Description	Screening Comments
Ex-Situ Treatment	Physical/Chemical	Soil Washing/Solvent Extraction	Use of water and solvents to remove contaminants from solid materials.	Eliminate due to the complexity of the technology, and the presence of constituents that will not be treated through this process.
		Solidification/Stabilization	Use of pozzolanic materials to chemically fix inorganics and solidify the matrix to reduce leachability.	Eliminate as leachability is not a primary concern.
	Biological	Aerobic Biodegradation	Use of microorganisms to chemically break down and detoxify organic compounds in the presence of oxygen.	Eliminate due to lack of effectiveness for site-specific COCs (metals).
		Phytoremediation	Use of plants to treat contamination.	Eliminate due to lack of effectiveness for site-specific COCs (PAHs and metals).
	Thermal	Incineration	Use of high temperature to destroy organic contaminants.	Eliminate because ineffective in treating inorganics and the high cost would not be cost effective relative to the site risks.
		Low-Temperature Thermal Desorption	Use of low to moderate temperature to volatilize contaminants.	Eliminate due to lack of volume of affected soil.
Disposal	Off-Base Landfill	Hazardous or Non-Hazardous Waste Landfill	Disposal of excavated material at a permitted offsite landfill or treatment, storage and disposal facility (TSDF).	Retain as a disposal option for excavated and other contaminated materials.
	Onsite Backfill	Onsite Backfill	Use of treated or clean soil as backfill for any excavated areas at the site	Eliminate as a disposal option because treatment is eliminated.
	Onsite Landfill	Consolidation	Excavation and placement in one location on site to minimize space and closure requirements.	Eliminate because soil quantities are not significant.

**TABLE 3-2
 PRELIMINARY SCREENING OF GROUNDWATER TECHNOLOGIES AND PROCESS OPTIONS
 DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
 PAGE 1 OF 6**

General Response Action	Technology	Process Options	Description	Screening Comment
No Action	None	Not Applicable	No activities conducted at site to remedy or monitor contamination. Site is not transferred and remains industrial/unused.	Retain. No action is retained as a baseline for comparison with other technologies.
Limited Action	Access Restrictions	Active Controls: Physical Barriers/ Security Guards	Fencing, markers, and warning signs to restrict access to contaminated groundwater.	Eliminate as not applicable. The exposure pathway of concern pertains to the use of groundwater as a water supply.
	Institutional Controls	Land Use Controls (LUCs)	Administrative action using LUCs to prohibit use of groundwater as a source of drinking water.	Retain. Groundwater is currently not used as a drinking water source. This action would limit future uses of groundwater and thus limit human exposure to COCs in groundwater.
	Monitoring	Sampling and Analysis	Periodic sampling and analysis of groundwater to track changes in contaminant concentrations.	Retain. This technology would assess any changes (attenuation or concentration), and support the continuation of LUCs, if present, as well as the progress of any active remediation efforts.
	Monitored Natural Attenuation (MNA)	Naturally Occurring Degradation and Dilution	Monitoring groundwater to assess the reduction in concentrations of chemical of concern (COCs) through natural processes.	Retain. Natural redox processes may decrease concentrations of COCs over time (Appendix A-5). Other controls will be required until cleanup goals are reached.

**TABLE 3-2
 PRELIMINARY SCREENING OF GROUNDWATER TECHNOLOGIES AND PROCESS OPTIONS
 DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
 PAGE 2 OF 6**

General Response Action	Technology	Process Options	Description	Screening Comment
Containment	Vertical Barriers	Slurry Wall	Low-permeability wall formed in a perimeter trench to restrict horizontal migration of groundwater.	Eliminate. There is no defined groundwater contaminant plume posing risk that could be redirected or controlled by a physical structure. This technology also would not restore groundwater quality.
		Sheet Piling	Metal sheet piling driven into the ground to restrict horizontal migration of groundwater.	Eliminate. There is no defined groundwater contaminant plume posing risk that could be redirected or controlled by a physical structure. This technology also would not restore groundwater quality.
		Grout Curtain	Pressure injection of grout to form a low-permeability perimeter wall to restrict horizontal migration of groundwater.	Eliminate. There is no defined groundwater contaminant plume posing risk that could be redirected or controlled by a physical structure. This technology also would not restore groundwater quality.
		Hydraulic Barrier	Use of extraction wells and/or collection trenches to restrict horizontal migration of groundwater.	Retain for further evaluation: Although there is no defined groundwater contaminant plume posing risk that could be redirected or controlled, downgradient movement can be controlled in certain circumstances.
	Horizontal Barriers	Physical Barrier	Injection of bottom-sealing slurry beneath source to minimize vertical migration of groundwater.	Eliminate. There is no defined groundwater contaminant plume posing risk that could be redirected or controlled by a physical structure. This technology also would not restore groundwater quality.

**TABLE 3-2
PRELIMINARY SCREENING OF GROUNDWATER TECHNOLOGIES AND PROCESS OPTIONS
DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 3 OF 6**

General Response Action	Technology	Process Options	Description	Screening Comment
Removal	Groundwater Extraction	Extraction Wells	Series of conventional pumping wells used to remove contaminated groundwater.	Retain for further evaluation: Although there is no defined groundwater contaminant plume posing risk, downgradient movement can be controlled in certain circumstances.
		Collection Trench	A permeable trench used to intercept and collect groundwater.	
Ex-Situ Treatment	Biological	Aerobic/ Anaerobic	Natural degradation of organic COCs via microorganisms in an aerobic (oxygen-rich) or anaerobic (oxygen-deficient) environment.	Eliminate. Not effective for metals in groundwater.
	Physical	Filtration	Separation of suspended solids from water via entrapment in a bed of granular media or membrane.	Eliminate. Metals are in groundwater are present in both dissolved and total fractions.
		Air Stripping	Contact of water with an air stream to remove volatile organic compounds (VOCs).	Eliminate. Not effective for metals in groundwater.
		Granular Activated Carbon (GAC) Adsorption	Separation of dissolved contaminants from water or air streams via adsorption onto GAC.	Eliminate. Not effective for metals in groundwater.
		Solvent Extraction	Separation of contaminants from a solution by contact with an immiscible liquid with a higher affinity for the COCs.	Eliminate. Not effective for metals in groundwater.
		Sedimentation	Separation of solids from water via gravity settling.	Eliminate. Metals are available in both dissolved and total fractions.
	Chemical	Neutralization/pH Adjustment	Use of acid or base to counteract high or low pH conditions.	Eliminate. pH conditions are not problematic

**TABLE 3-2
 PRELIMINARY SCREENING OF GROUNDWATER TECHNOLOGIES AND PROCESS OPTIONS
 DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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General Response Action	Technology	Process Options	Description	Screening Comment
Ex-Situ Treatment (continued)	Chemical (continued)	Ion Exchange	Removal of dissolved ions through exchange with similarly charged ions held on the active sites of a synthetic resin that is contacted with the liquid to be treated.	Eliminate. Not effective for metals in groundwater.
		Chemical Oxidation	Use of oxidizers such as ozone, hydrogen peroxide, or potassium permanganate to break down certain organic compounds.	Eliminate. Not effective for metals in groundwater.
		Ultraviolet Oxidation (UV)	Use of a controlled combination of ozone and/or hydrogen peroxide and UV light to induce photochemical oxidation of organic compounds.	Eliminate. Not effective for metals in groundwater.
		Precipitation/ Flocculation	Use of chemicals to convert soluble compounds into insoluble compounds, neutralize surface charges and promote attraction of colloidal particles to facilitate settling.	Retain. However, metals are present in both dissolved and total fractions.

**TABLE 3-2
PRELIMINARY SCREENING OF GROUNDWATER TECHNOLOGIES AND PROCESS OPTIONS
DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 5 OF 6**

General Response Action	Technology	Process Options	Description	Screening Comment
In-Situ Treatment	Biological	Anaerobic/ Aerobic	Enhancement of biodegradation of organics in an anaerobic (oxygen-deficient) or aerobic (oxygen-rich) environment by injection of electron-donor compounds or oxygen source. Microorganism cultures may need to be added.	Retain for organics, though no organics are retained as groundwater COCs at DU4-1. Not effective on inorganics.
		Bioprecipitation	Enhancement of sulfides through bacteria cultures, which in turn sequester metals into soil through precipitation.	Retain for inorganics in groundwater.
	Physical/Thermal	Air Stripping (AS) or AS/Soil Vapor Extraction (SVE)	Volatilization and enhancement of biodegradation of organic compounds by supply of air with or without capture and treatment of volatilized compounds.	Eliminate. Not effective on site-specific COCs (inorganics).
	Physical/Thermal (continued)	Dynamic Underground Stripping	Steam injection at the periphery of the contaminated area resulting in the vaporization of volatile compounds bound to soil and the movement of contaminants to a centrally located extraction well.	Eliminate. Not effective on site-specific COCs (inorganics).
	Thermal	Electrical Resistance Heating	Volatilization of organic COCs through groundwater and soil heating with electrical electrodes in combination with vacuum extraction of volatilized material.	Eliminate. Not effective on site-specific COCs (inorganics).
	Chemical	Chemical Oxidation	Chemical destruction of organic COCs through oxidation with hydrogen peroxide and ferrous iron (Fenton's Reagent), catalyzed percarbonate (RegenOx™), or potassium permanganate.	Eliminate. Not effective on site-specific COCs (inorganics).

**TABLE 3-2
 PRELIMINARY SCREENING OF GROUNDWATER TECHNOLOGIES AND PROCESS OPTIONS
 DU4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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General Response Action	Technology	Process Options	Description	Screening Comment
		Chemical Reduction	Chemical destruction of COCs through reduction with nano- or micro-size zero-valent iron (ZVI) in emulsions.	Eliminate. Not effective on site-specific COCs (inorganics).
		ZVI-Permeable Reactive Barrier (PRBs)	Use of a permeable barrier with ZVI, which allows the passage of groundwater and reacts with the contaminants.	Eliminate. Not effective on site-specific COCs (inorganics).
Discharge/ Disposal	Surface Discharge	Direct Discharge	Discharge of treated water to surface water.	Retain as a part of extraction
		Indirect Discharge	Discharge of collected/treated water to local sewage treatment plant.	Retain as a part of extraction
		Offsite Treatment Facility	Treatment and disposal of water at an off-site treatment works.	Retain as a part of extraction
Discharge/ Disposal (continued)	Subsurface Discharge	Reinjection	Use of injection wells, spray irrigation, or infiltration to discharge of treated groundwater underground.	Retain as a part of extraction

**TABLE 3-3
 RETAINED TECHNOLOGIES AND PROCESS OPTIONS SUMMARY: SOIL
 DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

General Response Action	Technology	Representative Process Option
No Action	None	No Action
Limited Action	Access Restrictions	Physical barriers (fencing and signs)
	Institutional Controls	Land Use Controls (LUCs) and Inspections
	Monitoring	Groundwater Monitoring to assure contaminants do not leach from soil to groundwater.
Containment	Permeable Cover	Placement of Soil Cap
Removal	Target Area (Hot Spot) Excavation	Bulk Excavation
Disposal	Landfilling	Off-Base Landfilling

**TABLE 3-4
 RETAINED TECHNOLOGIES AND PROCESS OPTIONS SUMMARY: GROUNDWATER
 DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

General Response Action	Technology	Representative Process Option
No Action	None	No Action
Limited Action	Institutional Controls	Land Use Controls (LUCs) and Inspections
	Monitored Natural Attenuation (MNA)	MNA - naturally occurring degradation through chemical process.
Groundwater Treatment	In-Situ Precipitation or Detoxification	Chemical injections to precipitate the metals out of solution so that they are trapped in the soil matrix.

**TABLE 4-1
SOIL ALTERNATIVES DESCRIPTION SUMMARY
DU 4-1 AT SITE 12 – TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Alternative	Description
Alternative SO1: No Action	<ul style="list-style-type: none"> • No Action • Five-year reviews (conducted as part of facility five-year reviews)
Alternative SO2: Land Use Controls and Inspections, and Fencing and Signs	<ul style="list-style-type: none"> • Land Use Controls to prevent residential and unrestricted recreational use of the site soil, and protect components of the remedy. • Yearly compliance inspections of the controls at the Site • Fencing as a barrier to restrict access to areas where contaminants are present at or near the surface, and signs to notify of hazards • Five-year reviews (conducted as part of facility five-year reviews)
Alternative SO3: Target Area Excavation, Offsite Landfill Disposal, and Land Use Controls and Inspections	<ul style="list-style-type: none"> • Excavation of target area soils exceeding PRGs • Transportation and offsite landfill disposal of excavated materials • Land Use Controls to prevent residential and unrestricted recreational use of the site soil, and protect the component of the remedy. Yearly compliance inspections of the controls at the Site • Five-year reviews (conducted as part of facility five-year reviews)

**TABLE 4-2
CHEMICAL-SPECIFIC ARARs AND TBCs
SOIL ALTERNATIVE SO1 – NO ACTION
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
EPA Human Health Assessment Cancer Slope Factors (CSFs)	None	To Be Considered	These are guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	Used to compute the individual incremental cancer risk resulting from exposure to carcinogenic contaminants in Site media. There are no actions for this alternative, so unacceptable risk remains.
Reference Dose (RfD)	None	To Be Considered	Guidance used to compute human health hazard resulting from exposure to non-carcinogens in site media.	Used to calculate potential non-carcinogenic hazards caused by exposure to contaminants. There are no actions for this alternative, so unacceptable risk remains.
Guidelines for Carcinogen Risk Assessment	EPA/630/P-03/001F (March 2005)	To Be Considered	Guidance for assessing cancer risk.	Used to calculate potential carcinogenic risks caused by exposure to contaminants. There are no actions for this alternative, so unacceptable risk remains.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA/630/R-03/003F (March 2005)	To Be Considered	Guidance of assessing cancer risks to children.	Used to calculate potential carcinogenic risks to children caused by exposure to contaminants. There are no actions for this alternative, so unacceptable risk remains.
State				
Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Short Title: Remediation Regulations)	Code of Rhode Island Rules (CRIR) 12-180-001; DEM-DSR-01-93, Section 8.02, and 8.03 (with the exception of 8.02A(iv)-TPH)	Applicable	These regulations set remediation standards for contaminated media. These standards are applicable to a CERCLA remedy when they are more stringent than federal standards. Establishes criteria for groundwater and both direct contact and leachability of contaminants in soil.	There are no actions for this alternative, so these standards would not be met.

**TABLE 4-3
 ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
 SOIL ALTERNATIVE SO1 - NO ACTION
 DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
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Federal

There are no federal location-specific ARARs.				
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State

There are no state location-specific ARARs.				
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**TABLE 4-4
 ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
 SOIL ALTERNATIVE SO1 - NO ACTION
 DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
There are no federal action-specific ARARs.				
State				
There are no state action-specific ARARs.				

**TABLE 4-5
CHEMICAL-SPECIFIC ARARs AND TBCs
SOIL ALTERNATIVE SO2 – LAND USE CONTROLS AND INSPECTIONS, FENCING AND SIGNS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
EPA Human Health Assessment Cancer Slope Factors (CSFs)	None	To Be Considered	These are guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	Used to compute the individual incremental cancer risk resulting from exposure to carcinogenic contaminants in site media. LUCs will prevent exposure to Site contaminants exceeding risk levels.
Reference Dose (RfD)	None	To Be Considered	Guidance used to compute human health hazard resulting from exposure to non-carcinogens in site media.	Used to calculate potential non-carcinogenic hazards caused by exposure to contaminants. LUCs will prevent exposure to Site contaminants exceeding risk levels.
Guidelines for Carcinogen Risk Assessment	EPA/630/P-03/001F (March 2005)	To Be Considered	Guidance for assessing cancer risk.	Used to calculate potential carcinogenic risks caused by exposure to contaminants. LUCs will prevent exposure to Site contaminants exceeding risk levels.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA/630/R-03/003F (March 2005)	To Be Considered	Guidance of assessing cancer risks to children.	Used to calculate potential carcinogenic risks to children caused by exposure to contaminants. LUCs will prevent exposure to Site contaminants exceeding risk levels.
State				
Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Short Title: Remediation Regulations)	Code of Rhode Island Rules (CRIR) 12-180-001, DEM-DSR-01-93, Section 8.02, and 8.03 (with the exception of 8.02A(iv)-TPH).	Applicable	These regulations set remediation standards for contaminated media (direct exposure criteria and leachability criteria). These standards are applicable to a CERCLA remedy when they are more stringent than federal standards. Establishes criteria for groundwater and both direct contact and leachability of contaminants in soil.	Although some COCs will remain at concentrations greater than direct exposure criteria, the LUCs and fencing will prevent exposure to the COCs. Although soil does not exceed leachability criteria, groundwater monitoring will assure that the contaminants in soil do not leach into groundwater.

**TABLE 4-6
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
SOIL ALTERNATIVE SO2 - LAND USE CONTROLS AND INSPECTIONS, FENCING AND SIGNS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
Floodplain Management and Protection of Wetlands	44 Code of Federal Regulations (CFR) 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988 Floodplain Management and Executive Order 11990, Protection of Wetlands.	Remedial alternatives (fencing and construction of groundwater monitoring wells) conducted within the 100-year floodplain or within federal jurisdictional wetlands and aquatic habitats will be implemented in compliance with these standards. During the remedial design stage the effects of soil remedial actions on federal jurisdictional wetlands will be evaluated. All practicable means will be used to minimize harm to the wetlands. Wetlands disturbed by these activities will be mitigated in accordance with requirements. Remedial activities will take place in or near floodplains. Public comment will be solicited in the Proposed Plan.
State				
Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act	Rhode Island Freshwater Wetlands Act RIGL 2-1-18 et seq.	Applicable	Defines and establishes provisions for the protection of Rhode Island jurisdictional wetlands (including area of land within 50 feet of the edge of the wetland). Actions required to prevent the undesirable drainage, excavation, filling, alteration, encroachment or any other form of disturbance or destruction to a wetland.	Part of the Site is a freshwater wetland and applicable freshwater wetland requirements will be met during the remedial action, which includes construction of fencing and groundwater monitoring wells.

**TABLE 4-7
 ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
 SOIL ALTERNATIVE SO2 - LAND USE CONTROLS AND INSPECTIONS, FENCING AND SIGNS
 DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
There are no federal action-specific ARARs.				
State				
There are no state action-specific ARARs.				

**TABLE 4-8
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
SOIL ALTERNATIVE SO3 – TARGET AREA EXCAVATION, OFFSITE LANDFILL DISPOSAL, AND LUCS AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 1 OF 2**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
EPA Human Health Assessment Cancer Slope Factors (CSFs)	None	To Be Considered	These are guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	Used to compute the individual incremental cancer risk resulting from exposure to carcinogenic contaminants in Site media. Target Area (hot spot) removal and LUCs will prevent exposure to Site contaminants exceeding risk levels.
Reference Dose (RfD)	None	To Be Considered	Guidance used to compute human health hazard resulting from exposure to non-carcinogens in site media.	Used to calculate potential non-carcinogenic hazards caused by exposure to contaminants. Target Area (hot spot) removal and LUCs will prevent exposure to Site contaminants exceeding risk levels.
Guidelines for Carcinogen Risk Assessment	EPA/630/P-03/001F (March 2005)	To Be Considered	Guidance for assessing cancer risk.	Used to calculate potential carcinogenic risks caused by exposure to contaminants. Target Area (hot spot) removal and LUCs will prevent exposure to Site contaminants exceeding risk levels.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA/630/R-03/003F (March 2005)	To Be Considered	Guidance of assessing cancer risks to children.	Used to calculate potential carcinogenic risks to children caused by exposure to contaminants. Target Area (hot spot) removal and LUCs will prevent exposure to Site contaminants exceeding risk levels.

**TABLE 4-8
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
SOIL ALTERNATIVE SO3 – TARGET AREA EXCAVATION, OFFSITE LANDFILL DISPOSAL, AND LUCS AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
State				
State of Rhode Island Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Short Title: Remediation Regulations)	CRIR 12-180-001, DEM-DSR-01-93, Section 8.02, and 8.03 (with the exception of 8.02A(iv)-TPH)	Applicable	These regulations set remediation standards for contaminated media. These standards are applicable to a CERCLA remedy when they are more stringent than federal standards. Establishes criteria for groundwater and both direct contact and leachability of contaminants in soil.	Target Area (hot spot) removal will prevent exposure to surface soil exceeding PRGs derived from these standards. LUCs will prevent interruption of the surface of the soil (to two feet) from interruption and prevent exposure to subsurface soil.

**TABLE 4-9
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
SOIL ALTERNATIVE SO3 - TARGET AREA EXCAVATION, OFFSITE LANDFILL DISPOSAL, AND LUCS AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
Floodplain Management and Protection of Wetlands	44 Code of Federal Regulations (CFR) 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988 Floodplain Management and Executive Order 11990, Protection of Wetlands.	Remedial alternatives conducted within the 100-year floodplain or within federal jurisdictional wetlands and aquatic habitats will be implemented in compliance with these standards. During the remedial design stage the effects of soil remedial actions on federal jurisdictional wetlands will be evaluated. All practicable means will be used to minimize harm to the wetlands. Wetlands disturbed by soil remediation will be mitigated in accordance with requirements. Remedial activities will take place in or near floodplains. Target Area (hot spot) removal will not affect the floodplain. Public comment will be solicited in the Proposed Plan.
Clean Water Act	Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, 40 CFR 230	Applicable	These regulations outline the requirements for the discharge of dredged or fill materials into surface waters including Federal jurisdictional wetlands. No activity that impacts waters of the United States shall be permitted if a practicable alternative that has less adverse impact exists. If there is no other practicable alternative, the impacts must be mitigated.	Target Area (hot spot) removal will be in the vicinity of wetlands. Removal activities will be designed to avoid wetlands and any adverse impacts will be mitigated.

TABLE 4-9
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
SOIL ALTERNATIVE SO3 - TARGET AREA EXCAVATION, OFFSITE LANDFILL DISPOSAL, AND LUCS AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
State				
Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act	Rhode Island Freshwater Wetlands Act RIGL 2-1-18 et seq.	Applicable	Defines and establishes provisions for the protection of Rhode Island jurisdictional wetlands (including area of land within 50 feet of the edge of the wetland). Actions required to prevent the undesirable drainage, excavation, filling, alteration, encroachment or any other form of disturbance or destruction to a wetland.	Part of the Site is a freshwater wetland and applicable freshwater wetland requirements will be met during the remedial action.

TABLE 4-10
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
SOIL ALTERNATIVE SO3 - TARGET AREA EXCAVATION, OFFSITE LANDFILL DISPOSAL, AND LUCS AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
There are no federal action-specific ARARs.				
State				
Clean Air Act - Fugitive Dust Control	RIGL 23-23 <i>et seq.</i> ; CRIR 12-31-05	Applicable	Requires that reasonable precaution be taken to prevent particulate matter from becoming airborne.	Removal and temporary storage of soil during the implementation of alternative would be performed to prevent material from becoming airborne, such as by water sprays.
Clean Air Act - Emissions Detrimental to Persons or Property	RIGL 23-23 <i>et seq.</i> ; CRIR 12-31-07	Applicable	Prohibits emissions of contaminants that may be injurious to humans, plant or animal life, or cause damage to property, or that reasonably interferes with the enjoyment of life and property.	Removal and temporary storage of soil during the implementation of alternative would be performed to prevent material from becoming airborne. Monitoring of air emissions during removal will be used to assess compliance with the standard.
Soil Erosion and Sediment Control Handbook, 1989	-	To Be Considered	Identifies soil erosion and sediment control (E & SC) requirements for construction activities involving land-disturbance activities.	E & SCs will be used during soil disturbance activities such as excavation.

TABLE 4-10
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
SOIL ALTERNATIVE SO3 - TARGET AREA EXCAVATION, OFFSITE LANDFILL DISPOSAL, AND LUCS AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
State (continued)				
Standards for Identification and Listing of Hazardous Waste	Rules and Regulations for Hazardous Waste Management, Code of Rhode Island Rules (CRIR), 12-030-003, Rule 5.8	Applicable	Rhode Island is delegated to administer the federal RCRA statute through its state regulations. Defines the listed and characteristic hazardous wastes.	These regulations apply to all waste generated during actions at the Site, such as excavated soil. Will be used when determining whether or not a solid waste is hazardous. The soil is not expected to be hazardous.
Standards for Generators of Hazardous Waste	Rules and Regulations for Hazardous Waste Management, CRIR 12-030-003, Rule 5.2, 5.3, and 5.4	Applicable	Establishes accumulation, manifesting, and pre-transport requirements for hazardous waste.	These regulations would apply to any waste generated at the Site that is determined to be hazardous, such as excavated soil. The soil is not expected to be hazardous.
Rules and Regulations for Groundwater Quality (Well Standards)	Appendix 1 -	Applicable	Identifies the standards and specification that must be followed for the installation or abandonment of monitoring wells.	Applies to the abandonment of existing monitoring wells.

TABLE 4-11
SUMMARY OF DETAILED ANALYSES OF SOIL REMEDIAL ALTERNATIVES
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Criteria	<u>Alternative SO1</u> No Action	<u>Alternative SO2</u> LUCs and Inspections, Fencing and Signs	<u>Alternative SO3</u> Target Area Excavation, Offsite Landfill Disposal, and LUCs and Inspections
THRESHOLD CRITERIA			
Overall Protection of Human Health and the Environment			
Does Alternative Protect Current and Future Users?	No	Yes	Yes
Are Environmental Risks Reduced by Alternative?	No	Yes	Yes
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)			
Compliance with Chemical-Specific ARARs	No	Yes	Yes
Compliance with Location-Specific ARARs	Not applicable	Yes	Yes
Compliance with Action-Specific ARARs	Not applicable	Yes	Yes
Compliance with Other Criteria	No	Yes	Yes
BALANCING CRITERIA			
Long-Term Effectiveness and Permanence			
Does Alternative Reduce Residual Risk?	No	Yes	Yes
Does Alternative Provide Adequate Remedial Controls?	No	Yes	Yes
Need a 5-Year Review?	No	Yes	Yes
Need for Long-Term Management?	No	Yes	Yes
Reduction of Toxicity, Mobility, or Volume through Treatment			
Treatment Process Used	None	None	None
Soil Treated	No	No	No
Reduction in Toxicity, Mobility, or Volume	None	None	None
Type and Quantity of Residuals Remaining after Treatment	No treatment so no residuals	No treatment so no residuals	No treatment so no residuals

TABLE 4-11
SUMMARY OF DETAILED ANALYSES OF SOIL REMEDIAL ALTERNATIVES
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Criteria	<u>Alternative SO1</u> No Action	<u>Alternative SO2</u> LUCs and Inspections, Fencing and Signs	<u>Alternative SO3</u> Target Area Excavation, Offsite Landfill Disposal, and LUCs and Inspections
Short-Term Effectiveness			
Risks to the Community during Remedial Action	No treatment so no construction risks	Minimal	Moderate, primarily due to truck traffic
Risk to Workers during Remedial Action	No treatment so no construction risks	Some risks; easily controlled	Some risks; easily controlled
Environmental Impacts	No treatment so no additional impacts	Minimal	Minimal
Time until Remedial Action Objectives Achieved	No remedial action; time >30 years.	Estimated 9 to 11 months	Estimated 9 to 11 months
Implementability			
Constructable	No construction activities	Yes	Yes
Reliability of Technology	No technology implemented	Reliable	Most Reliable
Ease of Undertaking Additional Remedial Action, if Necessary	Easily implementable	High	High
Ability to Monitor Effectiveness of Remedy	Not applicable	Yes	Yes
Ability to Coordinate with Other Agencies	Easy	Moderately easy	Moderately easy
Availability of Off-Site Disposal Services	None required	Available	Available
Availability of Equipment and Specialists	None required	Available	Available
Availability of Prospective Technologies	None required	Available	Available
Cost^a			
Capital Costs	\$0	\$18,767	\$744,835
Total Annual Operations and Maintenance (O&M)	\$0	\$3,135	\$2,585
5-Year Review Costs ^c	\$0	\$25,300 every 5 years	\$25,300 every 5 years
Total Present Worth Project Costs	\$0	\$197,863	\$911,613

^a Detailed cost estimates are presented in Appendix C 1.

**TABLE 5-1
GROUNDWATER ALTERNATIVES DESCRIPTION SUMMARY
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Alternative	Description
Alternative GW1: No Action	<ul style="list-style-type: none"> • No Action • Five-year reviews (conducted as part of facility five-year reviews)
Alternative GW2: Monitored Natural Attenuation (MNA) and Land Use Controls (LUCs) and Inspections	<ul style="list-style-type: none"> • Monitored natural attenuation to document decrease in metals levels in groundwater (the result of petroleum releases at the Site and upgradient) • Land Use Controls preventing the use of Site groundwater and to protect components of the remedy until PRGs are reached • Yearly compliance inspections of the controls at the Site (groundwater use restrictions) • Five-year reviews (conducted as part of facility five-year reviews)
Alternative GW3: In-Situ Groundwater Treatment	<ul style="list-style-type: none"> • Chemical injections to precipitate the metals in solution so that they are trapped in the soil matrix. • Land Use Controls preventing the use of Site groundwater and to protect components of the remedy until PRGs are reached • Yearly compliance inspections of the controls at the Site (groundwater use restrictions) • Monitoring to determine the effectiveness of the treatment • Five-year reviews (conducted as part of facility five-year reviews)

TABLE 5-2
CHEMICAL-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW1 - NO ACTION
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
EPA Human Health Assessment Cancer Slope Factors (CSFs)	None	To Be Considered	Guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	Used to compute the individual incremental cancer risk resulting from exposure to carcinogenic contaminants in site media. There are no actions for this alternative, so unacceptable risk remains.
Reference Dose (RfD)	None	To Be Considered	Guidance used to compute human health hazard resulting from exposure to non-carcinogens in site media.	Used to calculate potential non-carcinogenic hazards caused by exposure to contaminants. There are no actions for this alternative, so unacceptable risk remains.
Guidelines for Carcinogen Risk Assessment	EPA/630/P-03/001F (March 2005)	To Be Considered	Guidance for assessing cancer risk.	Used to calculate potential carcinogenic risks caused by exposure to contaminants. There are no actions for this alternative, so unacceptable risk remains.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA/630/R-03/003F (March 2005)	To Be Considered	Guidance for assessing cancer risk to children.	Used to calculate potential carcinogenic risks to children caused by exposure to contaminants. There are no actions for this alternative, so unacceptable risk remains.
Safe Drinking Water Act, National Primary Drinking Water Regulations - Maximum Contaminant Levels (MCLs)	40 Code of Federal Regulations (CFR) 141 Subpart G	Applicable	Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies which are potential public / residential water sources.	There are no actions for this alternative. Concentrations of Contaminants of Concern (COCs) are already less than MCLs.

**TABLE 5-2
CHEMICAL-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW1 - NO ACTION
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal (Continued)				
Safe Drinking Water Act, National Primary Drinking Water Regulations - Maximum Contaminant Level Goals (MCLGs)	40 CFR 141 Subpart F	Applicable (non-zero MCLGs only)	Establishes maximum contaminant level goals (MCLGs) for public water supplies. MCLGs are health goals for drinking water sources. These unenforceable health goals are available for a number of organic and inorganic compounds.	There are no actions for this alternative. Concentrations of COCs are already less than non-zero MCLGs.
Drinking Water Health Advisory for Manganese (EPA Office of Drinking Water), 2004	-	To Be Considered	Health Advisories are estimates of risk from consumption of contaminated drinking water. They consider non-carcinogenic effects only. To be considered for contaminants in groundwater that may be used for drinking water where the standard is more conservative than either federal or state statutory or regulatory standards. The Health Advisory standard for manganese is 0.3 ppm.	Health advisory will be used to evaluate the non-carcinogenic risk resulting from exposure to manganese. There are no actions being taken for this alternative, so unacceptable risk remains for residential use of groundwater.
State				
Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Short Title: Remediation Regulations)	Code of Rhode Island Rules (CRIR) 12-180-001; DEM-DSR-01-93, Section 8.02, and 8.03 (with the exception of 8.02A(iv)-TPH)	Applicable	These regulations set remediation standards for contaminated media. These standards are applicable to a CERCLA remedy when they are more stringent than federal standards. Establishes criteria for groundwater.	There are no actions for this alternative. Concentrations of COCs are already less than Groundwater Objectives.

**TABLE 5-3
 ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW1 - NO ACTION
 DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
There are no federal location-specific ARARs.				
State				
There are no state location-specific ARARs.				

**TABLE 5-4
 ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW1 - NO ACTION
 DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
There are no federal action-specific ARARs.				
State				
There are no state action-specific ARARs.				

TABLE 5-5
CHEMICAL-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW2 – MONITORED NATURAL ATTENUATION AND LUCS
AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
EPA Human Health Assessment Cancer Slope Factors (CSFs)	None	To Be Considered	Guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	Used to compute the individual incremental cancer risk resulting from exposure to carcinogenic contaminants in site media. Land Use Controls (LUCs) will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, and MNA will attain PRGs within a reasonable time frame.
Reference Dose (RfD)	None	To Be Considered	Guidance used to compute human health hazard resulting from exposure to non-carcinogens in site media.	Used to calculate potential non-carcinogenic hazards caused by exposure to contaminants. LUCs will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, and MNA will attain PRGs within a reasonable time frame.
Guidelines for Carcinogen Risk Assessment	EPA/630/P-03/001F (March 2005)	To Be Considered	Guidance for assessing cancer risks.	Used to calculate potential carcinogenic risks caused by exposure to contaminants. LUCs will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, and MNA will attain PRGs within a reasonable time frame.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA/630/R-03/003F (March 2005)	To Be Considered	Guidance for assessing cancer risks to children.	Used to calculate potential carcinogenic risks to children caused by exposure to contaminants. LUCs will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, and MNA will attain PRGs within a reasonable time frame.
Safe Drinking Water Act, National Primary Drinking Water Regulations - Maximum Contaminant Levels (MCLs)	40 Code of Federal Regulations (CFR) 141 Subpart G	Applicable	Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies which are potential drinking water	Concentrations of Contaminants of Concern (COCs) are already less than MCLs. LUCs will prevent residential use of groundwater. Periodic monitoring will verify that MCLs are not exceeded.

TABLE 5-5
CHEMICAL-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW2 – MONITORED NATURAL ATTENUATION AND LUCS
AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal (Continued)				
Safe Drinking Water Act, National Primary Drinking Water Regulations - Maximum Contaminant Level Goals (MCLGs)	40 CFR 141 Subpart F	Applicable (non-zero MCLGs only)	Establishes maximum contaminant level goals (MCLGs) for public water supplies. MCLGs are health goals for drinking water sources. These unenforceable health goals are available for a number of organic and inorganic compounds.	Concentrations are already less than non-zero MCLGs. LUCs will be established to temporarily prevent residential use of groundwater. Periodic monitoring to be conducted as part of MNA will verify that non-zero MCLGs are not exceeded. (The MCLG for arsenic is zero.)
Drinking Water Health Advisory for Manganese (EPA Office of Drinking Water), 2004	None	To Be Considered	Health Advisories are estimates of risk from consumption of contaminated drinking water. They consider non-carcinogenic effects only. To be considered for contaminants in groundwater that may be used for drinking water purposes, where the standard is more conservative than either federal or state statutory or regulatory standards. The Health Advisory standard for manganese is 0.3 mg/L.	Health advisory will be used to evaluate the non-carcinogenic risk resulting from exposure to manganese. LUCs will prevent exposure to contaminant in groundwater exceeding risk level, and MNA will attain PRGs within a reasonable time frame.
State				
Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Short Title: Remediation Regulations)	Code of Rhode Island Rules (CRIR) 12-180-001, DEM-DSR-01-93, Section 8.02, and 8.03 (with the exception of 8.02A(iv)-TPH)	Applicable	These regulations set remediation standards for contaminated media. These standards are applicable to a CERCLA remedy when they are more stringent than federal standards, though for this site, no COCs are identified for contaminants for which state standards are more stringent than federal standards. Establishes criteria for groundwater.	Concentrations of COCs are already less than State Groundwater Objectives. LUCs will prevent residential use of groundwater. Periodic monitoring to be conducted as part of MNA will verify that Groundwater Objectives are not exceeded.

TABLE 5-6
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW2 - MONITORED NATURAL
ATTENUATION AND LUCs AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
Floodplain Management and Protection of Wetlands	44 Code of Federal Regulations (CFR) 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988 Floodplain Management and Executive Order 11990, Protection of Wetlands.	Remedial alternatives (construction of groundwater monitoring wells) conducted within the 100-year floodplain or within federal jurisdictional wetlands and aquatic habitats will be implemented in compliance with these standards. During the remedial design stage the effects of MNA on federal jurisdictional wetlands will be evaluated. All practicable means will be used to minimize harm to the wetlands. Wetlands disturbed by MNA activities will be mitigated in accordance with requirements. Remedial activities will take place in or near floodplains. Public comment will be solicited in the Proposed Plan.
State				
Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act	Rhode Island Freshwater Wetlands Act RIGL 2-1-18 et seq.	Applicable	Defines and establishes provisions for the protection of Rhode Island jurisdictional wetlands (including area of land within 50 feet of the edge of the wetland). Actions required to prevent the undesirable drainage, excavation, filling, alteration, encroachment or any other form of disturbance or destruction to a wetland.	Part of the Site is a freshwater wetland and applicable freshwater wetland requirements will be met during the remedial action, which includes construction of groundwater monitoring wells.

TABLE 5-7
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW2 - MONITORED NATURAL ATTENUATION AND LUCS AND INSPECTION
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
EPA Groundwater Protection Strategy	August 1984; NCP Preamble, Vol. 55, No. 46, March 8, 1990, 40 CFR 300, p. 8733); Guidelines for Ground-Water Classification (November 1986)	To Be Considered	The Groundwater Protection Strategy provides a common reference for preserving clean groundwater and protecting the public health against the effects of past contamination. Guidelines for consistency in groundwater protection programs focus on the highest beneficial use of a groundwater aquifer.	Risk based standards will be met through MNA within the time frame identified in the text. LUCs will be maintained throughout this period to prevent groundwater use until the PRGs are met, and monitoring will confirm that concentrations remain below RGs over time.
Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites	OSWER Directive 9200.4-17P (April 21, 1999)	To Be Considered	EPA guidance regarding the use of monitored natural attenuation for the cleanup of contaminated soil and groundwater in particular, the guidance explains that a reasonable time frame for achieving cleanup standard through monitored attenuation would be comparable to that which could be achieved through active restoration.	MNA is expected to take approximately 45 years to achieve groundwater cleanup standards. Although this is significantly longer than the GW-3 treatment alternative, there are a number of technical issues regarding GW-3 that may alter its effectiveness. If after five years a trend showing MNA cannot be confirmed, an alternative remedy will be considered and after ten years without sufficient contaminant reductions a treatment remedy may be implemented.
State				
Standards for Identification and Listing of Hazardous Waste	Rules and Regulations for Hazardous Waste Management, Code of Rhode Island Rules	Applicable	Rhode Island is delegated to administer the federal RCRA statute through its state regulations. Defines the listed and characteristic hazardous wastes.	These regulations apply to all waste generated during actions at the Site, such as investigation-derived waste (IDW) from monitoring. Will be used when determining whether or not a solid waste is hazardous. IDW is not

TABLE 5-7
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW2 - MONITORED NATURAL ATTENUATION AND LUCS AND INSPECTION
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
	(CRIR), 12-030-003, Rule 5.8			expected to be hazardous.
Standards for Generators of Hazardous Waste	Rules and Regulations for Hazardous Waste Management, CRIR 12-030-003, Rule 5.2, 5.3, and 5.4	Applicable	Establishes accumulation, manifesting, and pre-transport requirements for hazardous waste.	These regulations would apply to any waste generated at the Site that is determined to be hazardous, such as IDW from monitoring. IDW is not expected to be hazardous.

State (Continued)

Drilling of Drinking Water Wells; Rules and Regulations Governing the Enforcement of Chapter 46-13.2 Relating to the Drilling of Drinking Water Wells	Rule 7.01	Applicable	Prohibits installing drinking water wells near pollution sources or potential contamination sources.	LUCs would prevent the installation of residential groundwater wells near pollution sources or potential contamination sources.
Rules and Regulations for Groundwater Quality (Well Standards)	Appendix 1	Applicable	Identifies the standards and specification that must be followed for the installation or abandonment of monitoring wells.	Applies to the abandonment of existing monitoring wells.
Clean Air Act - Fugitive Dust Control	RIGL 23-23 et seq.; CRIR 12-31-05	Applicable	Requires that reasonable precaution be taken to prevent particulate matter from becoming airborne.	Removal and temporary storage of soil would be performed to prevent material from becoming airborne, such as by water sprays.
Clean Air Act - Emissions Detrimental to Persons or Property	RIGL 23-23 et seq.; CRIR 12-31-07	Applicable	Prohibits emissions of contaminants which may be injurious to humans, plant or animal life, or cause damage to property, or reasonably interfere with the enjoyment of life and property.	Removal and temporary storage of soil would be performed to prevent material from becoming airborne. Monitoring of air emissions during removal will be used to assess compliance with the standard.
Soil Erosion and Sediment Control Handbook, 1989	-	To Be Considered	Identifies soil erosion and sediment control (E & SC) requirements for	E & SCs will be used during soil disturbance activities, such as

TABLE 5-7
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW2 - MONITORED NATURAL ATTENUATION AND LUCS AND INSPECTION
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
			construction activities involving land-disturbance activities.	excavation.

TABLE 5-8
CHEMICAL-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW3 – IN SITU BIOREMEDIATION, LUCS AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
EPA Human Health Assessment Cancer Slope Factors (CSFs)	None	To Be Considered	Guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	Used to compute the individual incremental cancer risk resulting from exposure to carcinogenic contaminants in groundwater. LUCs will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, in-situ treatment through bioprecipitation will attain PRGs, and monitoring will assure that these PRGs continue to be met over time.
Reference Dose (RfD)	None	To Be Considered	Guidance used to compute human health hazard resulting from exposure to non-carcinogens in site media.	Used to calculate potential non-carcinogenic hazards caused by exposure to contaminants. LUCs will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, in-situ treatment through bioprecipitation will attain PRGs, and monitoring will assure that these PRGs continue to be met over time.
Guidelines for Carcinogen Risk Assessment	EPA/630/P-03/001F (March 2005)	To Be Considered	Guidance for assessing cancer risks.	Used to calculate potential carcinogenic risks caused by exposure to contaminants. LUCs will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, in-situ treatment through bioprecipitation will attain PRGs, and monitoring will assure that these PRGs continue to be met over time.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA/630/R-03/003F (March 2005)	To Be Considered	Guidance for assessing cancer risks to children.	Used to calculate potential carcinogenic risks to children caused by exposure to contaminants. LUCs will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, in-situ treatment through bioprecipitation will attain PRGs, and monitoring will assure that these PRGs continue to be met over time.
Safe Drinking Water Act, National Primary Drinking Water Regulations - Maximum	40 Code of Federal Regulations (CFR) 141	Applicable	Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public drinking water	MCLs were considered in development of PRGs. Concentrations of COCs are already less than MCLs. LUCs will prevent residential use of groundwater which poses CERCLA risk.

TABLE 5-8
CHEMICAL-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW3 – IN SITU BIOREMEDIATION, LUCS AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Contaminant Levels (MCLs)	Subpart G		supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies which are potential drinking water sources.	Periodic monitoring will verify that MCLs are not exceeded during in-situ treatment.
Federal (Continued)				
Safe Drinking Water Act, National Primary Drinking Water Regulations - Maximum Contaminant Level Goals (MCLGs)	40 CFR 141 Subpart F	Applicable (non-zero MCLGs only)	Establishes maximum contaminant level goals (MCLGs) for public water supplies. MCLGs are health goals for drinking water sources. These unenforceable health goals are available for a number of organic and inorganic compounds.	Concentrations of COCs are already less than non-zero MCLGs. LUCs will be established to temporarily prevent residential use of groundwater in order to meet PRGs for residential risk. Periodic monitoring to be conducted as part of in-situ treatment through bioprecipitation will verify that non-zero MCLGs are not exceeded. (The MCLG for arsenic is zero.)
Drinking Water Health Advisory for Manganese (EPA Office of Drinking Water), 2004	None	To Be Considered	Health Advisories are estimates of risk from consumption of contaminated drinking water. They consider non-carcinogenic effects only. To be considered for contaminants in groundwater that may be used for drinking water purposes, where the standard is more conservative than either federal or state statutory or regulatory standards. The Health Advisory standard for manganese is 0.3 mg/L.	Health advisory was considered in development of PRG for manganese. LUCs will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, in-situ treatment through bioprecipitation will attain PRGs, and monitoring will assure that these PRGs continue to be met over time.

TABLE 5-8
CHEMICAL-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW3 – IN SITU BIOREMEDIATION, LUCS AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
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Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
State				
Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Short Title: Remediation Regulations)	Code of Rhode Island Rules (CRIR) 12-180-001, DEM-DSR-01-93, Section 8.02, and 8.03 (with the exception of 8.02A(iv)-TPH)	Applicable	These regulations set remediation standards for contaminated media. These standards are applicable to a CERCLA remedy when they are more stringent than federal standards, though for this site, no COCs are identified for contaminants for which state standards are more stringent than federal standards.	Concentrations of COCs are already less than State Groundwater Objectives. LUCs will temporarily prevent exposure to contaminants in groundwater exceeding risk levels, in-situ treatment through bioprecipitation will attain PRGs, and monitoring will assure that these PRGs continue to be met over time.

**TABLE 5-9
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW3 – IN-SITU BIOREMEDIATION, LUCs
AND INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
Floodplain Management and Protection of Wetlands	44 Code of Federal Regulations (CFR) 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988 Floodplain Management and Executive Order 11990, Protection of Wetlands. Prohibits activities that adversely affect a federally-regulated wetland unless there is no practicable alternative and the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.	Remedial alternatives (construction of groundwater injection and monitoring wells) conducted within the 100-year floodplain or within federal jurisdictional wetlands and aquatic habitats will be implemented in compliance with these standards. During the remedial design stage the effects of groundwater treatment operations on federal jurisdictional wetlands will be evaluated. All practicable means will be used to minimize harm to the wetlands. Wetlands disturbed by these activities will be mitigated in accordance with requirements. Remedial activities will take place in or near floodplains. Public comment will be solicited in the Proposed Plan.
State				
Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act	Rhode Island Freshwater Wetlands Act RIGL 2-1-18 et seq.	Applicable	Defines and establishes provisions for the protection of Rhode Island jurisdictional wetlands (including area of land within 50 feet of the edge of the wetland). Actions are required preventing the undesirable drainage, excavation, filling, alteration, encroachment or any other form of disturbance or destruction to a wetland.	Injection well installation, injection, and monitoring activities will be conducted to minimize the disturbance of state jurisdictional wetland and perimeter wetland

TABLE 5-10
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW3 – IN-SITU BIOREMEDIATION, LUCS AND
INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 1 OF 2

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
Federal				
EPA Groundwater Protection Strategy	August 1984; NCP Preamble, Vol. 55, No. 46, March 8, 1990, 40 CFR 300, p. 8733); Guidelines for Ground-Water Classification (November 1986)	To Be Considered	The Groundwater Protection Strategy provides a common reference for preserving clean groundwater and protecting the public health against the effects of past contamination. Guidelines for consistency in groundwater protection programs focus on the highest beneficial use of a groundwater aquifer.	Risk based standards are anticipated to be met under this alternative through in-situ treatment within an estimated four years. However, the permanence of the treatment is uncertain, and continued monitoring will be required to assure criteria continue to be met in the long term. LUCs will be maintained throughout this period to prevent groundwater use until the PRGs are met.
Underground Injection Control (UIC)	40 CFR 144.146, and 147.200	Applicable	These regulations address the discharge of wastes, chemicals or other substances in the subsurface. The federal UIC program designates injection wells incidental to aquifer remediation as Class V wells.	These regulations apply to certain substances that may be included in the injected nutrient mix that will be utilized to enhance bioprecipitation. The design step will adhere to these regulations as the injected material mix is determined.
State				
Standards for Identification and Listing of Hazardous Waste	Rules and Regulations for Hazardous Waste Management, Code of Rhode Island Rules (CRIR), 12-030-003, Rule 5.8	Applicable	Rhode Island is delegated to administer the federal RCRA statute through its state regulations. Defines the listed and characteristic hazardous wastes.	These regulations apply to all waste generated during actions at the Site, such as investigation-derived waste (IDW) from monitoring. Will be used when determining whether or not a solid waste is hazardous. IDW is not expected to be hazardous.
Standards for Generators of Hazardous Waste	Rules and Regulations for Hazardous Waste Management, CRIR 12-030-003, Rule 5.2, 5.3, and	Applicable	Establishes accumulation, manifesting, and pre-transport requirements for hazardous waste.	These regulations would apply to any waste generated at the Site that is determined to be hazardous, such as IDW from in-situ biological treatment. IDW is not expected to be hazardous.

TABLE 5-10
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs - GROUNDWATER ALTERNATIVE GW3 – IN-SITU BIOREMEDIATION, LUCS AND
INSPECTIONS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 2 OF 2

Requirement	Citation	Status	Synopsis of Requirement	Action to be Taken to Attain ARAR
	5.4			
State (Continued)				
Drilling of Drinking Water Wells; Rules and Regulations Governing the Enforcement of Chapter 46-13.2 Relating to the Drilling of Drinking Water Wells	Rule 7.01	Applicable	Prohibits installing drinking water wells near pollution sources or potential contamination sources.	LUCs would prevent the installation of residential groundwater wells near pollution sources or potential contamination sources.
Rules and Regulations for Groundwater Quality (Well Standards)	Appendix 1	Applicable	Identifies the standards and specification that must be followed for the installation or abandonment of injection and monitoring wells.	Applies to the installation and abandonment of injection and monitoring wells.
Soil Erosion and Sediment Control Handbook, 1989	-	To Be Considered	Identifies soil erosion and sediment control (E & SC) requirements for construction activities involving land-disturbance activities.	E & SCs will be used during soil disturbance activities, such as installation of injection wells.
Injection Control Regulations	Underground Injection Control Program Rules and Regulations	Applicable	Establishes a State Underground Injection Control Program consistent with federal requirements to preserve the quality of the groundwater of the state.	These regulations apply to certain substances that may be included in the injected nutrient mix that will be used to enhance Bioprecipitation. The design step will adhere to these regulations as the injected material mix is determined.

TABLE 5-11
SUMMARY OF GROUNDWATER REMEDIAL ALTERNATIVES DETAILED ANALYSIS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 1 OF 2

Criteria	<u>Alternative GW1</u> No Action	<u>Alternative GW2</u> Monitored Natural Attenuation and Land Use Controls and Inspections	<u>Alternative GW3</u> In-Situ treatment, Land Use Controls and Inspections
THRESHOLD CRITERIA			
Overall Protection of Human Health and the Environment			
Does Alternative Protect Current and Future Users?	No	Yes	Yes
Are Environmental Risks Reduced by Alternative?	No	Yes, by natural processes	Yes
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)			
Compliance with Chemical-Specific ARARs	No	Yes ^a	Yes
Compliance with Location-Specific ARARs	Not applicable	Yes	Yes
Compliance with Action-Specific ARARs	Not applicable	Yes	Yes
Compliance with Other Criteria	No	Yes ^a	Yes
BALANCING CRITERIA			
Long-Term Effectiveness and Permanence			
Does Alternative Reduce Residual Risk?	No	Yes	Yes
Does Alternative Provide Adequate Remedial Controls?	No	Yes	Yes
Need a 5-Year Review?	Yes	Yes	Yes
Need for Long-Term Management?	Yes	Yes	Yes
Reduction of Toxicity, Mobility, or Volume through Treatment			
Treatment Process Used	None	None	Yes
Groundwater Treated	No	Not Applicable	Yes
Reduction in Toxicity, Mobility, or Volume	None	Not Applicable	Yes
Type and Quantity of Residuals Remaining after Treatment	No treatment so no residuals	No treatment so no residuals	Precipitated Metals
Short-Term Effectiveness			
Risks to the Community During Remedial Action	No action so no construction risks	Minimal	Minimal
Risk to Workers During Remedial Action	No action so no construction risks	Minimal	Minimal
Environmental Impacts	No action so no additional impacts	Minimal	Minimal
Time until Remedial Action Objectives Achieved	No remedial action; time >30 years.	26-45 years	4+ years

TABLE 5-11
SUMMARY OF GROUNDWATER REMEDIATION ALTERNATIVES DETAILED ANALYSIS
DU 4-1 AT SITE 12 - TANK FARM 4, FEASIBILITY STUDY
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 2 OF 2

Criteria	<u>Alternative GW1</u> No Action	<u>Alternative GW2</u> Monitored Natural Attenuation and Land Use Controls and Inspections	<u>Alternative GW3</u> In-Situ treatment, Land Use Controls and Inspections
Implementability			
Constructable	No construction activities	No construction activities	Yes
Reliability of Technology	No technology implemented	Moderate	Moderate
Ease of Undertaking Additional Remedial Action, if Necessary	Easily implementable	High	High
Ability to Monitor Effectiveness of Remedy	Not applicable	Yes	Yes
Ability to Coordinate with Other Agencies	Easy	Easy	Moderate
Availability of Off-Site Disposal Services	None required	None Required	None Required
Availability of Equipment and Specialists	None required	Available	Available
Availability of Prospective Technologies	None required	Available	Available
Cost^b			
Capital Costs	\$0	\$82,281	\$1,171,213
Annual Operation and Maintenance (O&M) or Monitoring	\$0	\$112,807 per year (years 1 - 2); \$28,202 (years 3-30)	\$112,807 per year (years 0-3); 28,202 per year (years 4-30)
Annual Costs (inspections)		\$2,585	\$2,585
5-Year Review Costs ^d	\$0	\$25,300/5 years	\$25,300/5 years
Total Present Worth Project Costs	\$0	\$1,044,946	\$2,774,703

^a The Health advisory for Manganese, selected as a PRG for groundwater at the site will be met over time following attenuation of historic petroleum releases (see text).

^b Detailed cost estimates are presented in Appendix C 2

FIGURES

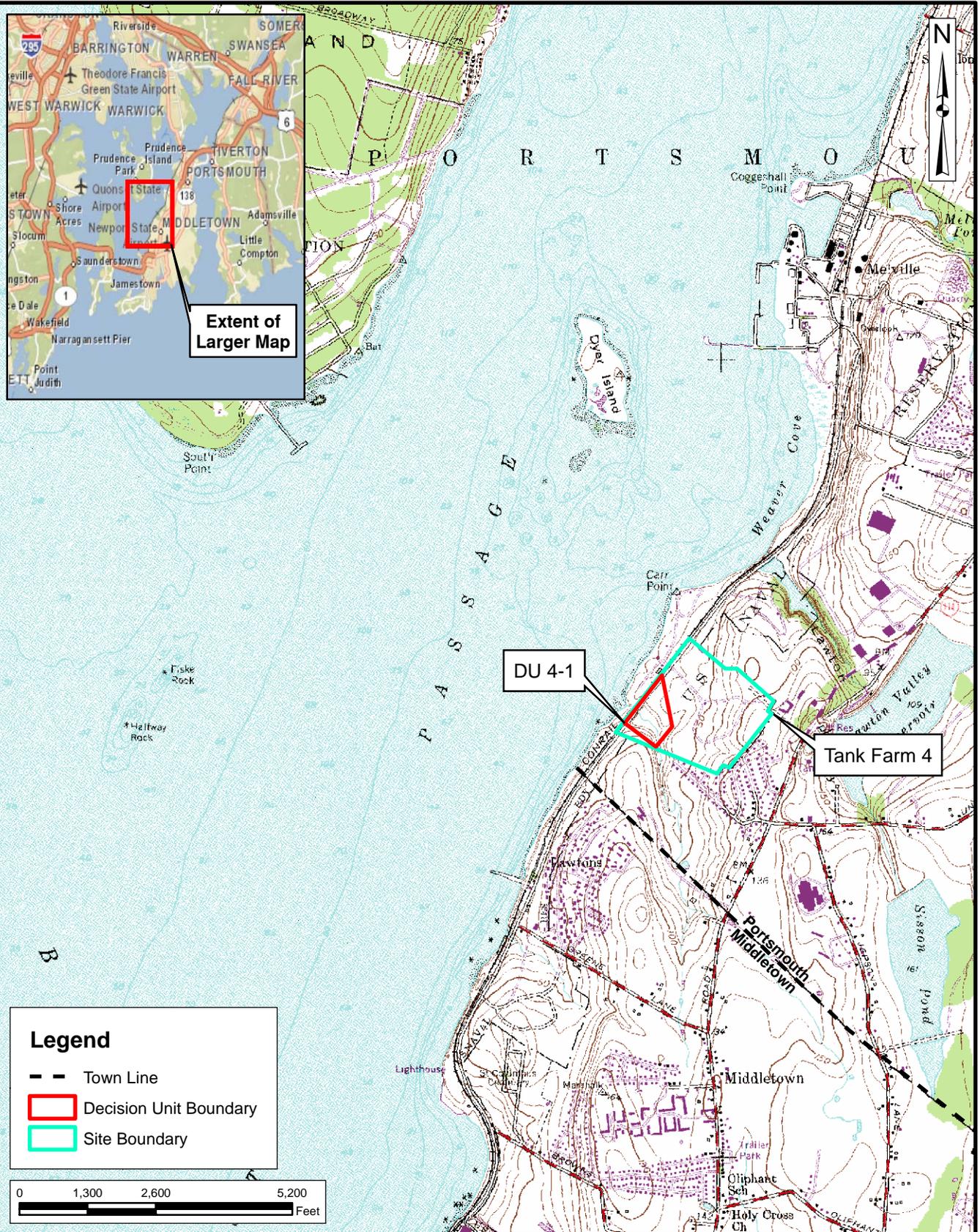


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

VICINITY MAP

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
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FIGURE NUMBER 1-1	

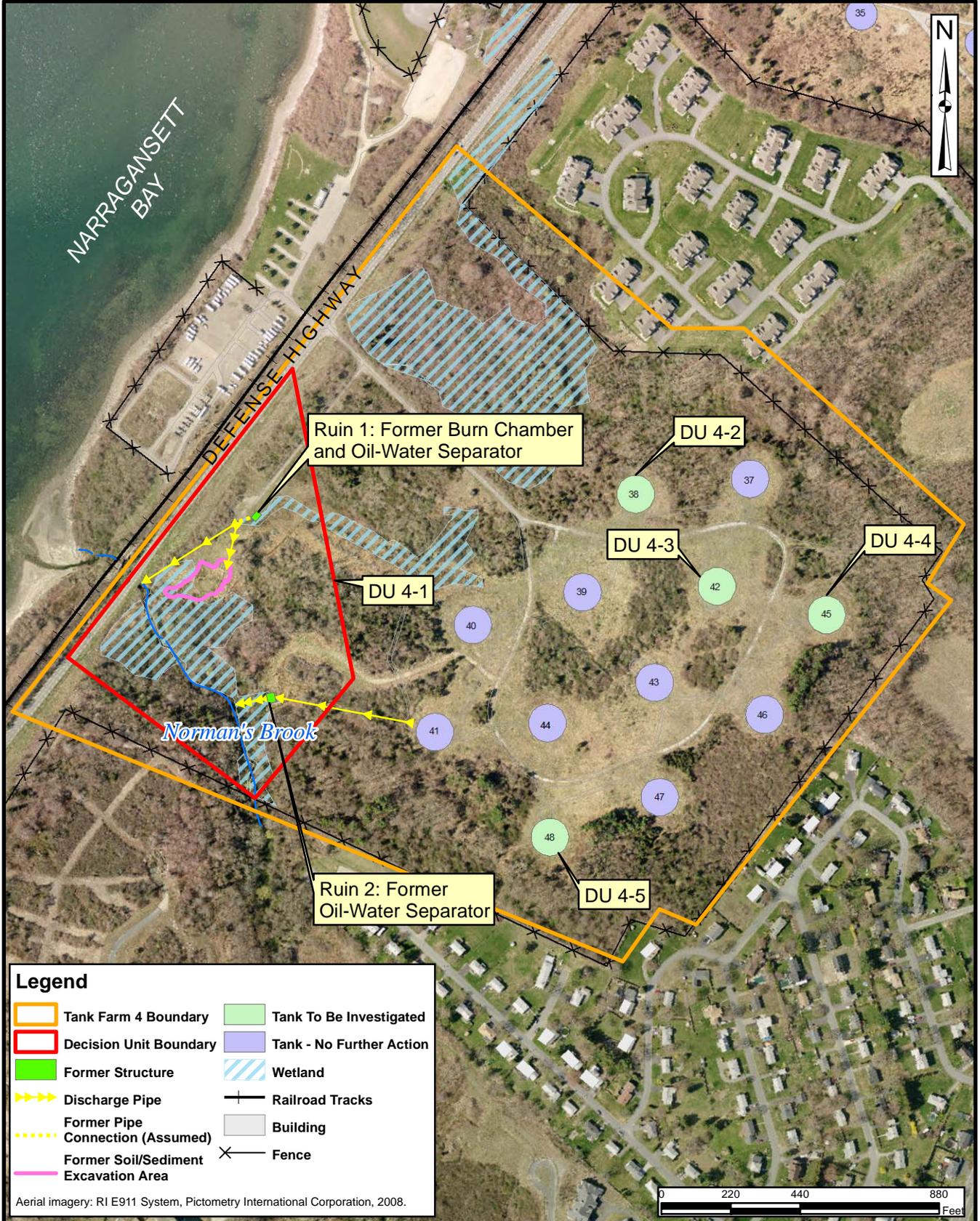


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

DU 4-1 AND TANK FARM 4 LOCATION

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
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1-2	



Legend

Tank Farm 4 Boundary	Tank To Be Investigated
Decision Unit Boundary	Tank - No Further Action
Former Structure	Wetland
Discharge Pipe	Railroad Tracks
Former Pipe Connection (Assumed)	Building
Former Soil/Sediment Excavation Area	Fence

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

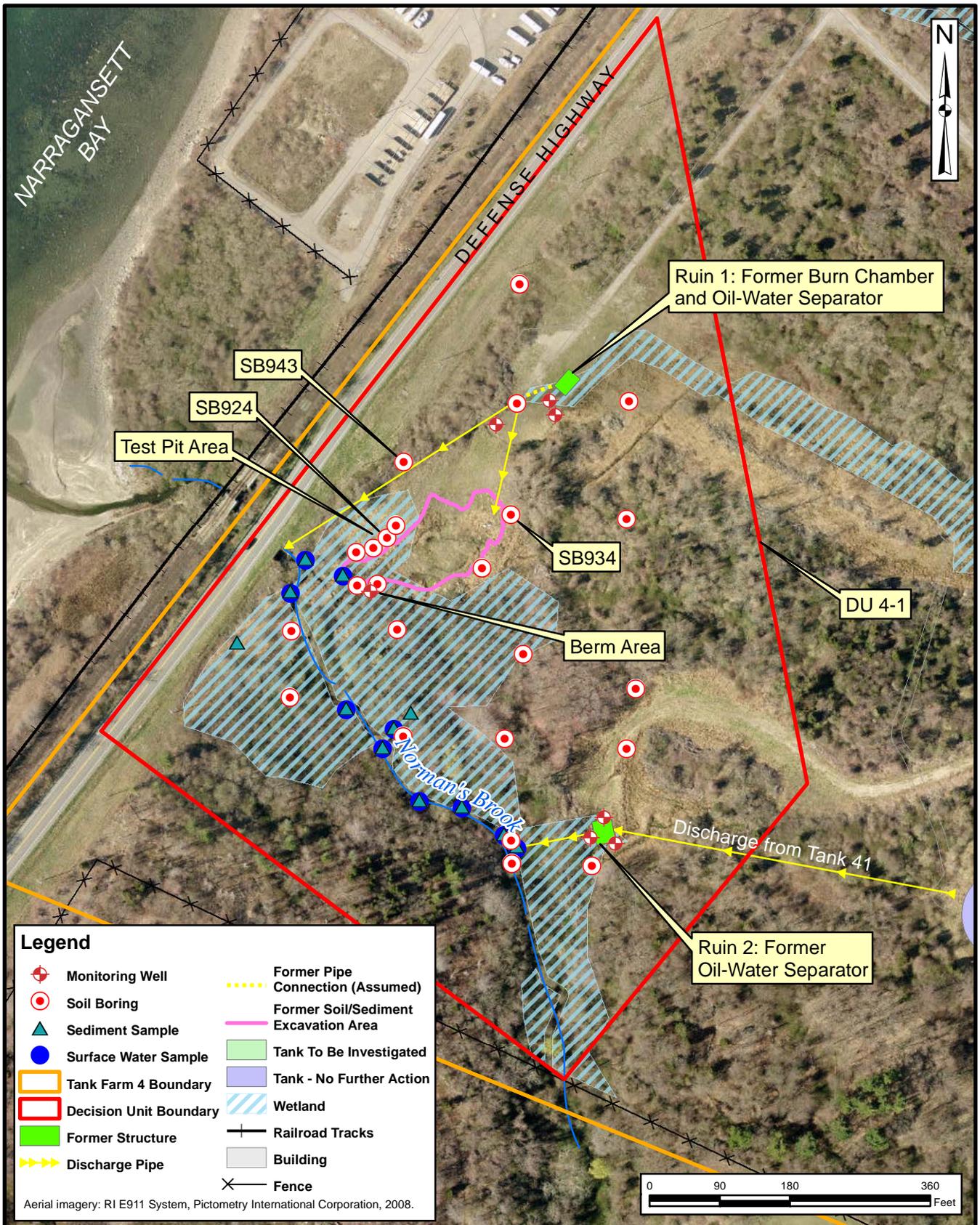


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PORTSMOUTH, RHODE ISLAND

DU 4-1 AND TANK FARM 4 - SITE MAP

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
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FIGURE NUMBER 1-3	



Legend

- Monitoring Well
- Soil Boring
- Sediment Sample
- Surface Water Sample
- Tank Farm 4 Boundary
- Decision Unit Boundary
- Former Structure
- Discharge Pipe
- Former Pipe Connection (Assumed)
- Former Soil/Sediment Excavation Area
- Tank To Be Investigated
- Tank - No Further Action
- Wetland
- Railroad Tracks
- Building
- Fence

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

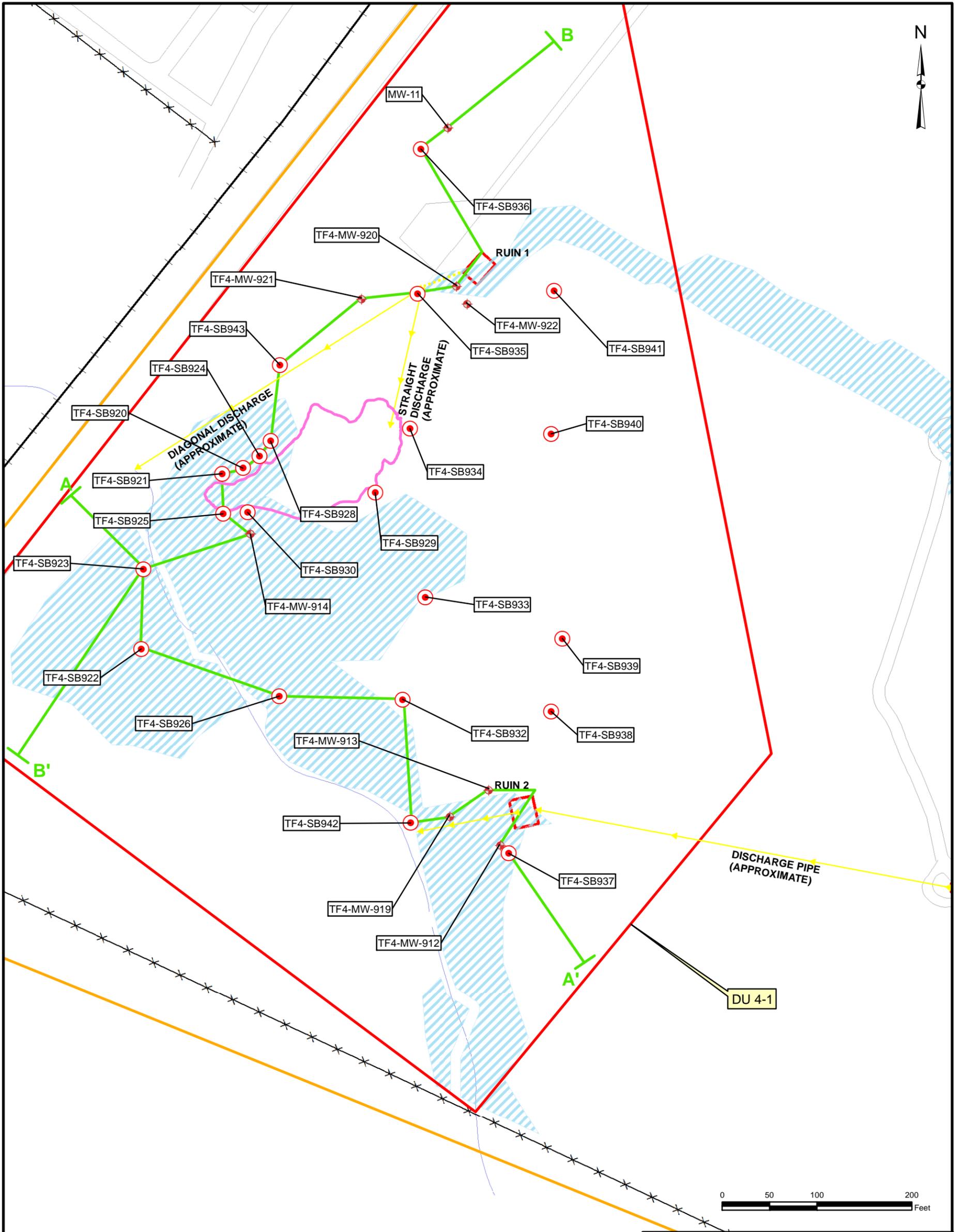


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DU 4-1 SITE MAP

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
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Legend

- Soil Sample Location
- ◆ Monitoring Well
- Former Soil/Sediment Excavation Area
- Discharge Pipe
- Former Pipe Connection (Assumed)
- Cross-Section Line
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Wetland

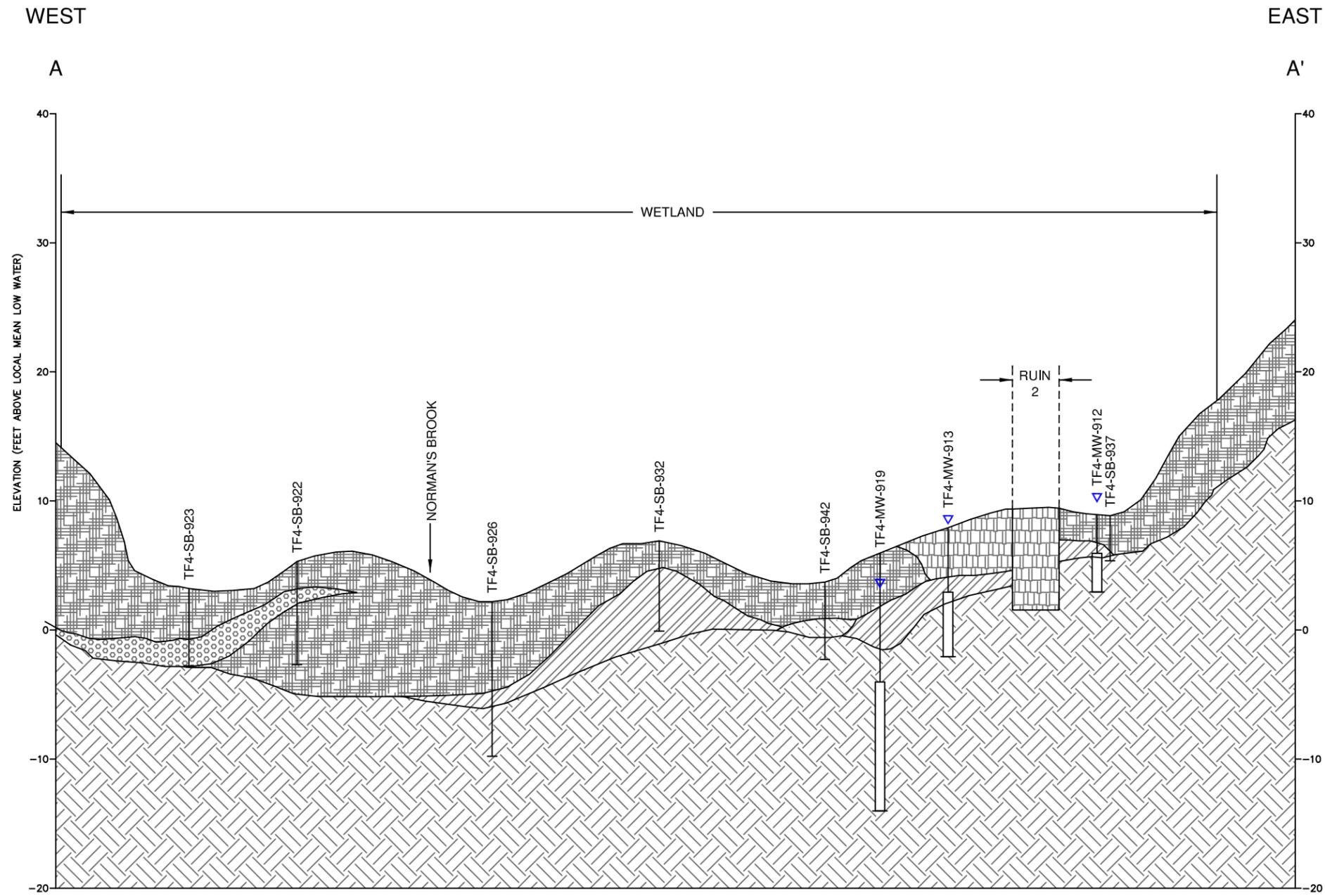


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PORTSMOUTH, RHODE ISLAND

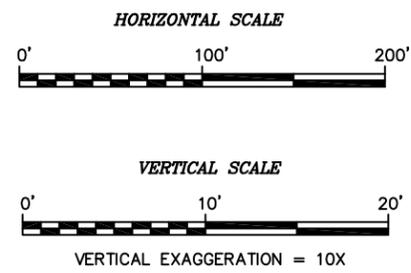
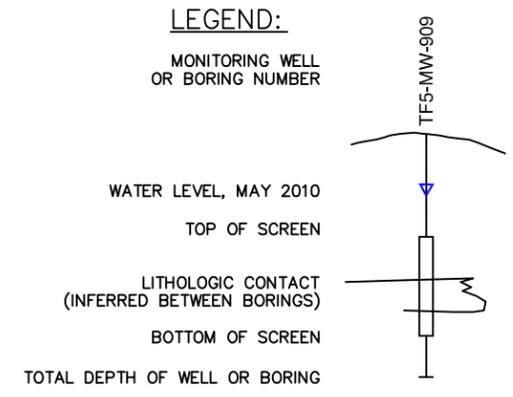
CROSS-SECTION LINES

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

FILE \\...TF4_DU4-1_X-SECTION_LINE.mxd	SCALE PER SCALE BAR
FIGURE NUMBER FIGURE NO. 1-5	REV 0
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- LEGEND:**
- FILL
 - SANDY SILT
 - SILTY SAND
 - SANDY SILT WITH GRAVEL
 - WEATHERED PHYLLITE
 - PHYLLITE



NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

CROSS-SECTION A-A'

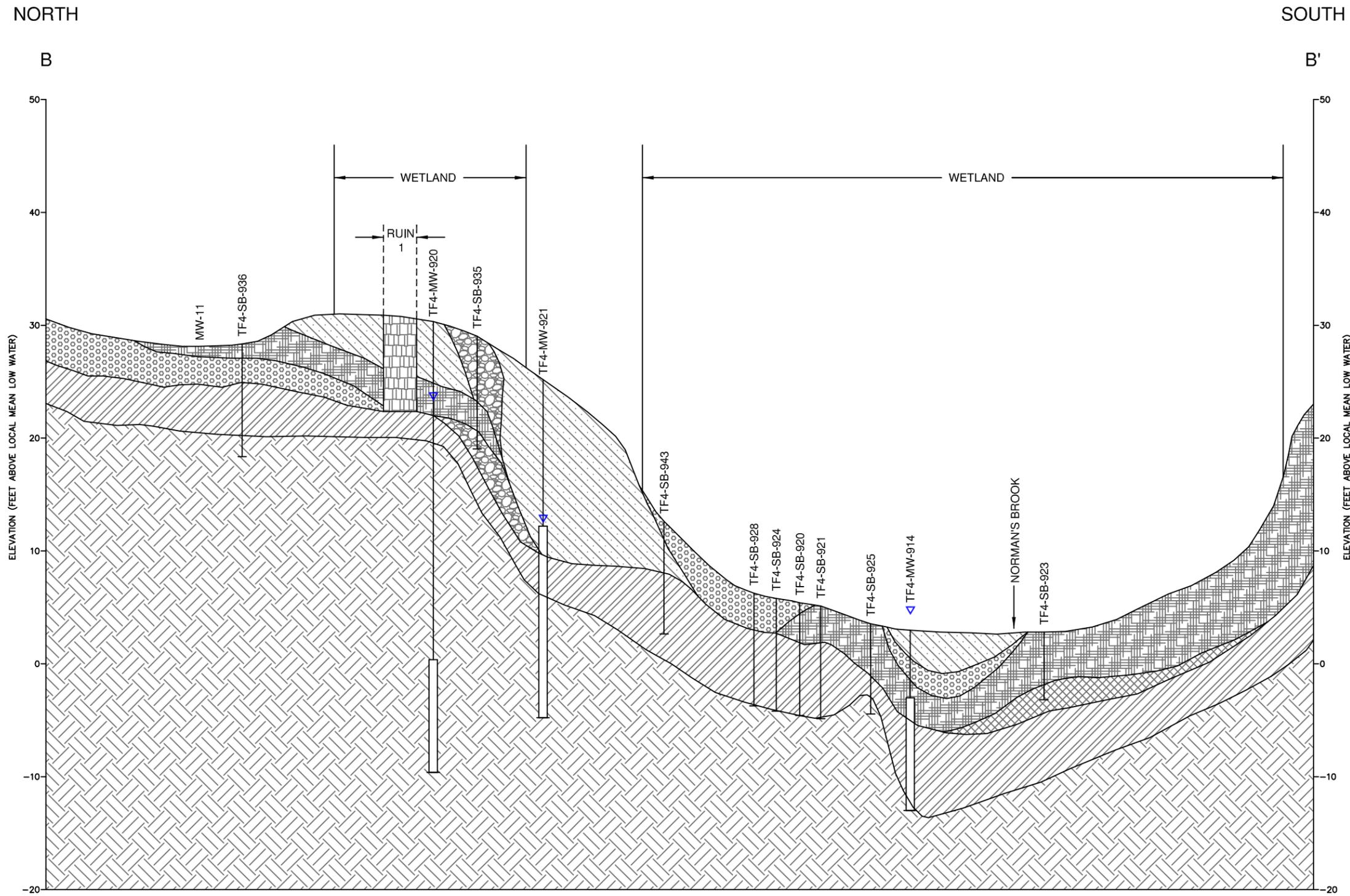
DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE
PER SCALE BAR

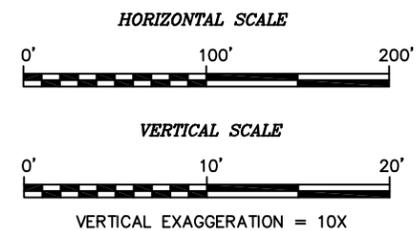
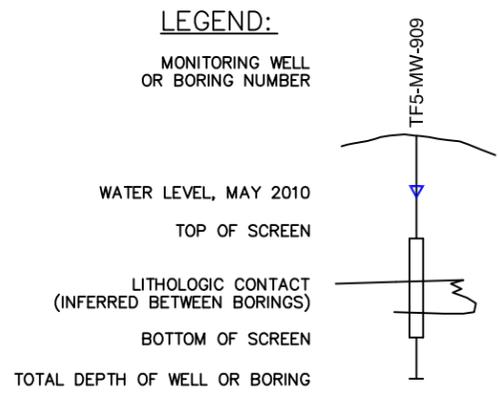
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FIGURE NUMBER
1-6



- LEGEND:**
- FILL
 - SANDY SILT
 - SILTY SAND
 - SILT WITH GRAVEL
 - SILTY SAND WITH GRAVEL
 - SANDY SILT WITH GRAVEL
 - WEATHERED PHYLLITE
 - PHYLLITE

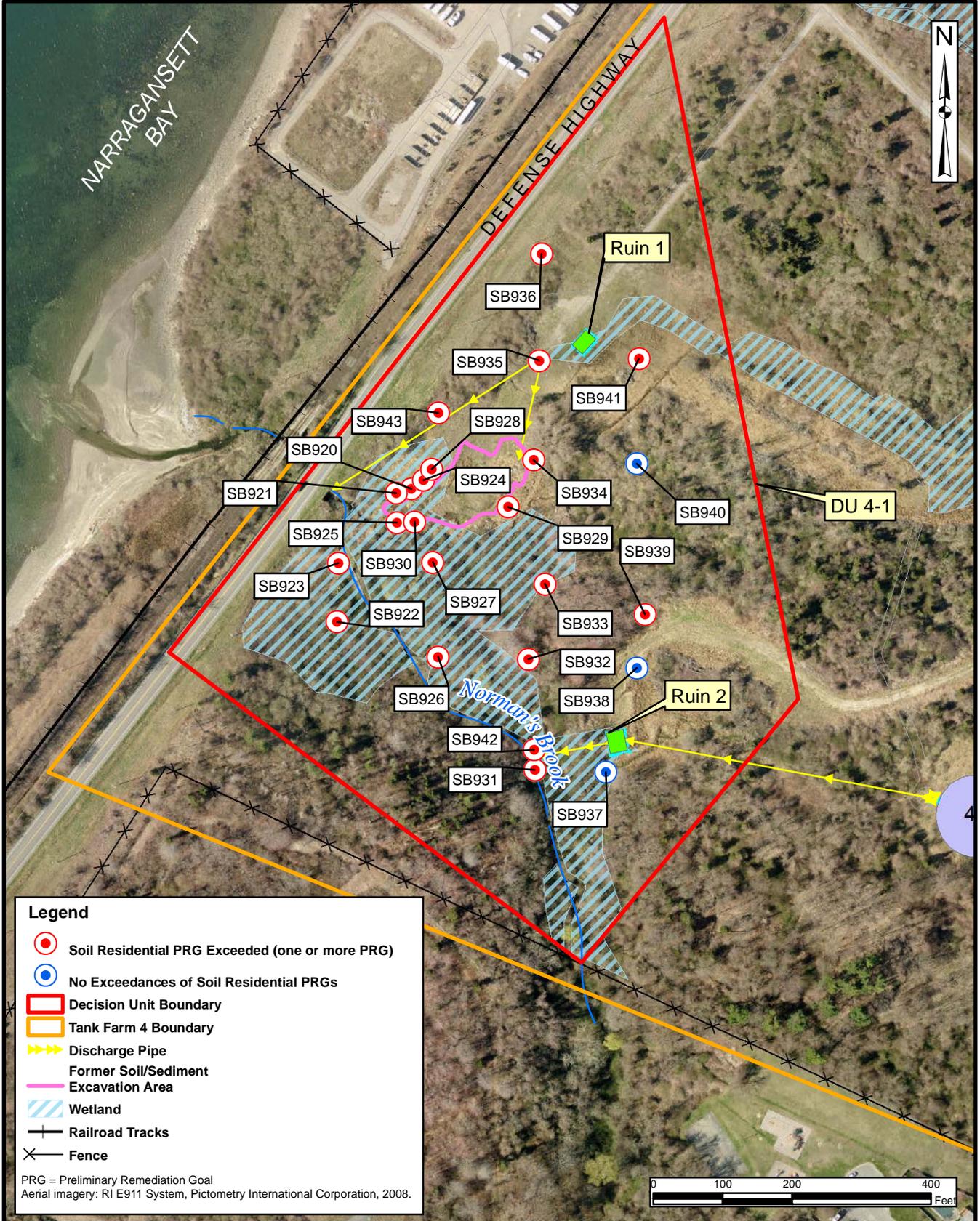


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

CROSS-SECTION B-B'

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

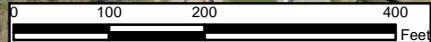
SCALE PER SCALE BAR	
FILE	
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FIGURE NUMBER	
1-7	



Legend

- Soil Residential PRG Exceeded (one or more PRG)
- No Exceedances of Soil Residential PRGs
- Decision Unit Boundary
- Tank Farm 4 Boundary
- ▶▶▶ Discharge Pipe
- Former Soil/Sediment Excavation Area
- Wetland
- +— Railroad Tracks
- X Fence

PRG = Preliminary Remediation Goal
 Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

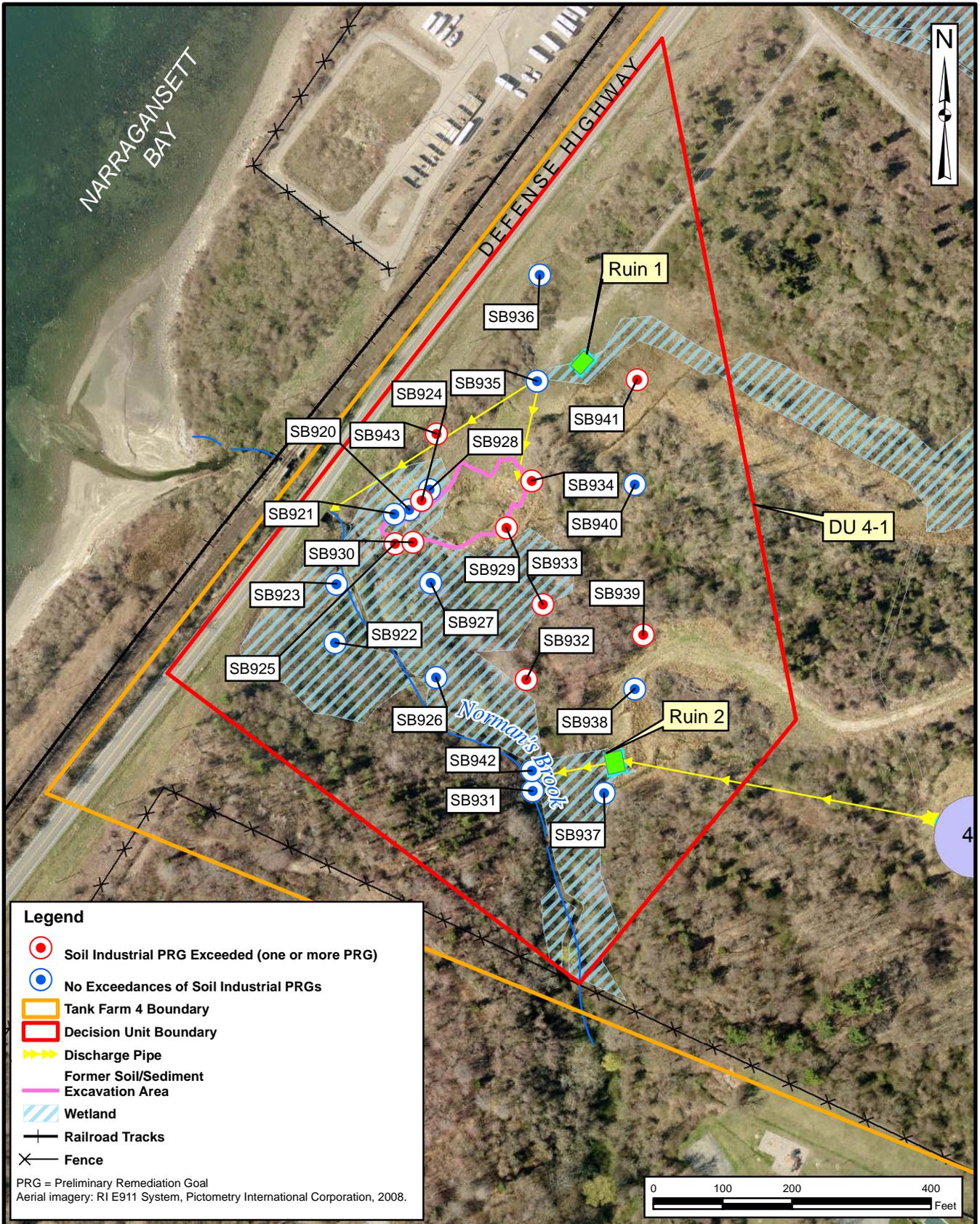


NAVAL STATION NEWPORT
 PORTSMOUTH, RHODE ISLAND

SOILS EXCEEDING RESIDENTIAL PRGs

DU 4-1, SITE 12 - TANK FARM 4
 FEASIBILITY STUDY

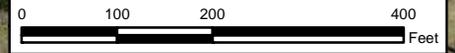
SCALE PER SCALE BAR	
FILE I:_DU4-1_SOIL_EXCEED_RES_PRG.MXD	
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FIGURE NUMBER	
2-1	



Legend

- Soil Industrial PRG Exceeded (one or more PRG)
- No Exceedances of Soil Industrial PRGs
- Tank Farm 4 Boundary
- Decision Unit Boundary
- Discharge Pipe
- Former Soil/Sediment Excavation Area
- Wetland
- Railroad Tracks
- ✕ Fence

PRG = Preliminary Remediation Goal
 Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

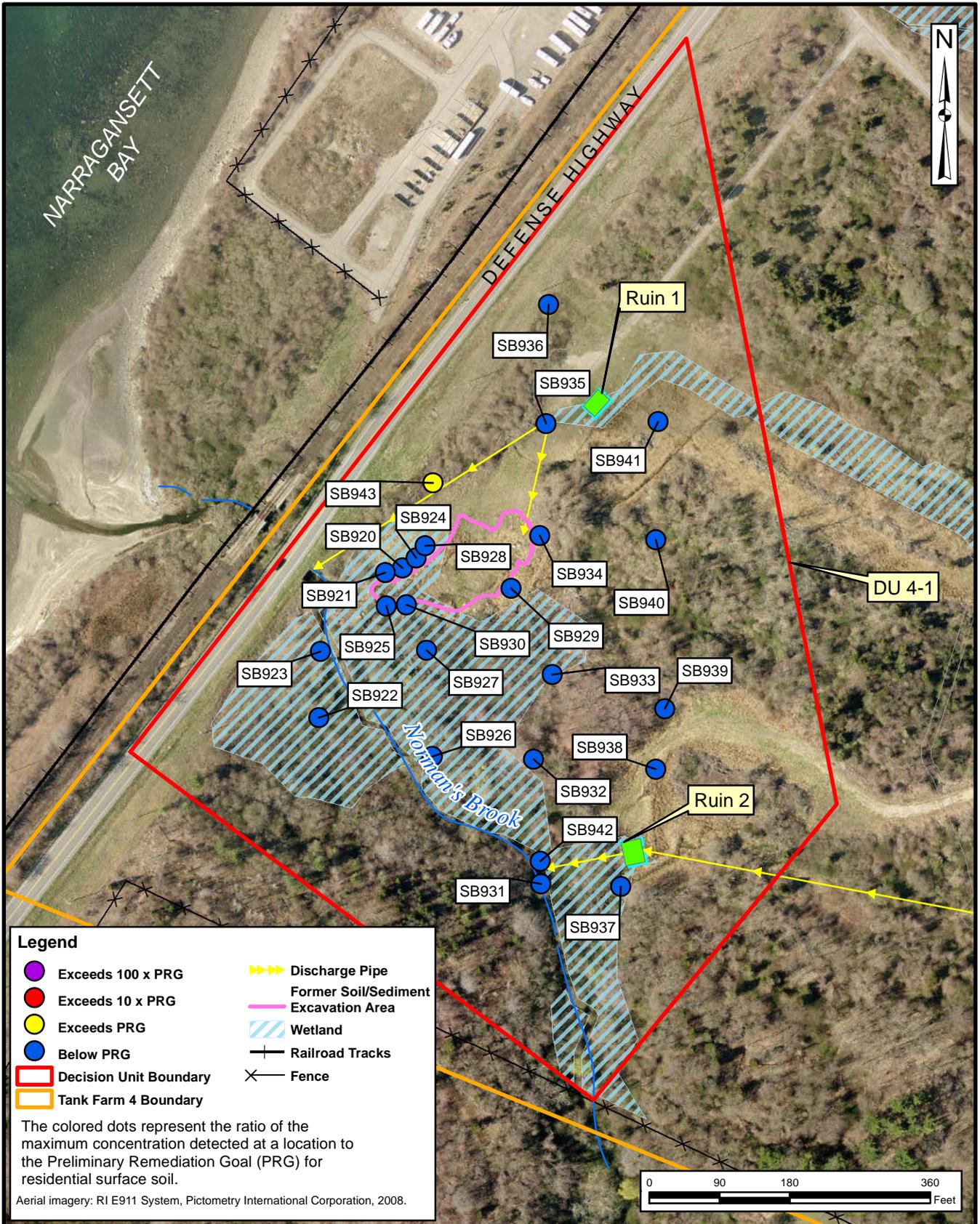


NAVAL STATION NEWPORT
 PORTSMOUTH, RHODE ISLAND

SOILS EXCEEDING INDUSTRIAL PRGs

DU 4-1, SITE 12 - TANK FARM 4
 FEASIBILITY STUDY

SCALE PER SCALE BAR	
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FIGURE NUMBER	
2-2	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Discharge Pipe
- Former Soil/Sediment Excavation Area
- Wetland
- +— Railroad Tracks
- X— Fence

The colored dots represent the ratio of the maximum concentration detected at a location to the Preliminary Remediation Goal (PRG) for residential surface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

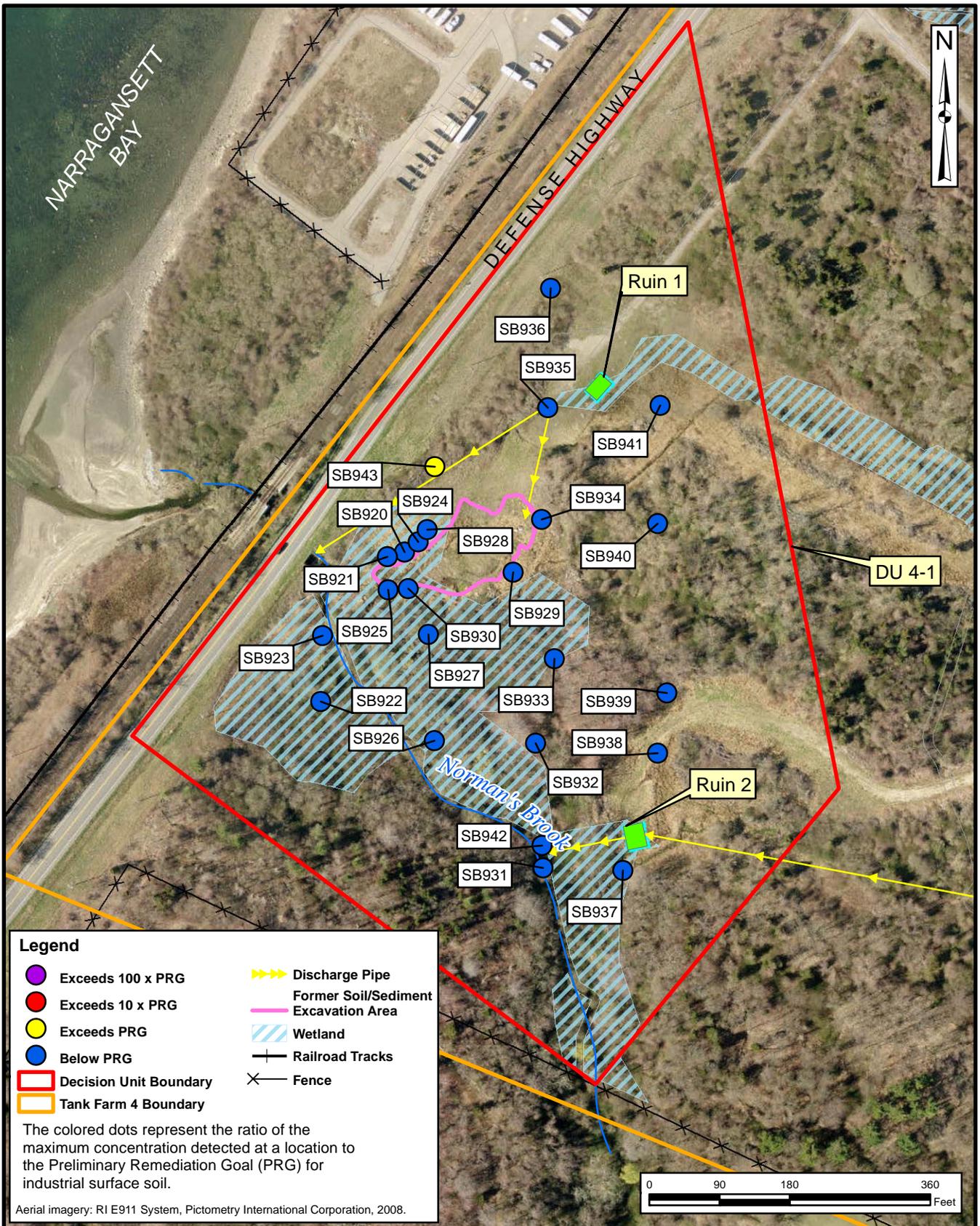


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

ARSENIC IN SURFACE SOIL vs. RESIDENTIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
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2-3	



NAVAL STATION NEWPORT
 PORTSMOUTH, RHODE ISLAND

ARSENIC IN SURFACE SOIL vs. INDUSTRIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
 FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
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FIGURE NUMBER	
2-4	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- - - Discharge Pipe
- Former Soil/Sediment Excavation Area
- Wetland
- +— Railroad Tracks
- x- Fence

The colored dots represent the ratio of the maximum concentration detected at a location to the Preliminary Remediation Goal (PRG) for residential subsurface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

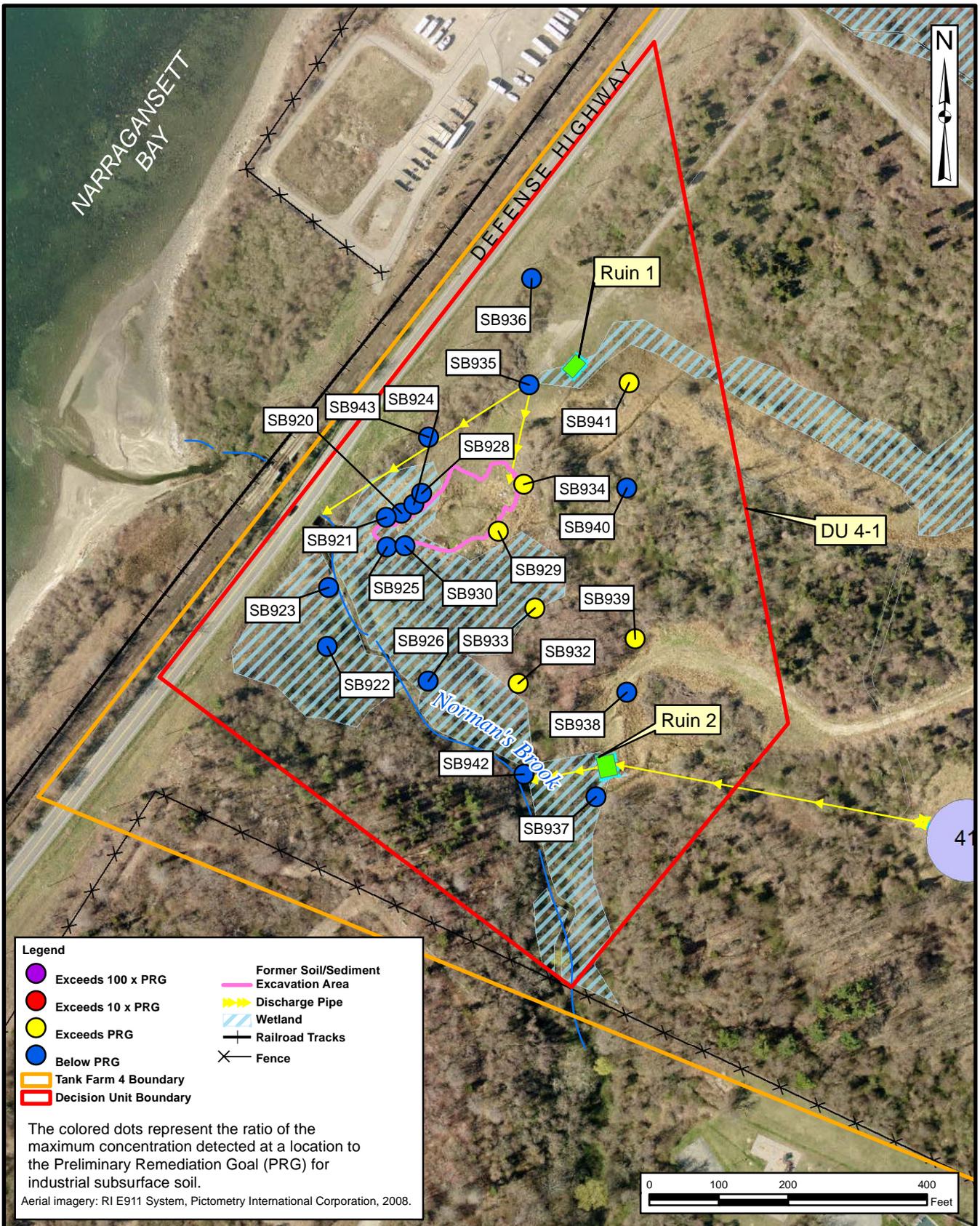


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

**ARSENIC IN SUBSURFACE SOIL
vs. RESIDENTIAL PRG**

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE I:\DU4-1_ARS.SUB.RES.PRGMXD	
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FIGURE NUMBER 2-5	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Tank Farm 4 Boundary
- Decision Unit Boundary
- Former Soil/Sediment Excavation Area
- Discharge Pipe
- Wetland
- Railroad Tracks
- ✕ Fence

The colored dots represent the ratio of the maximum concentration detected at a location to the Preliminary Remediation Goal (PRG) for industrial subsurface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

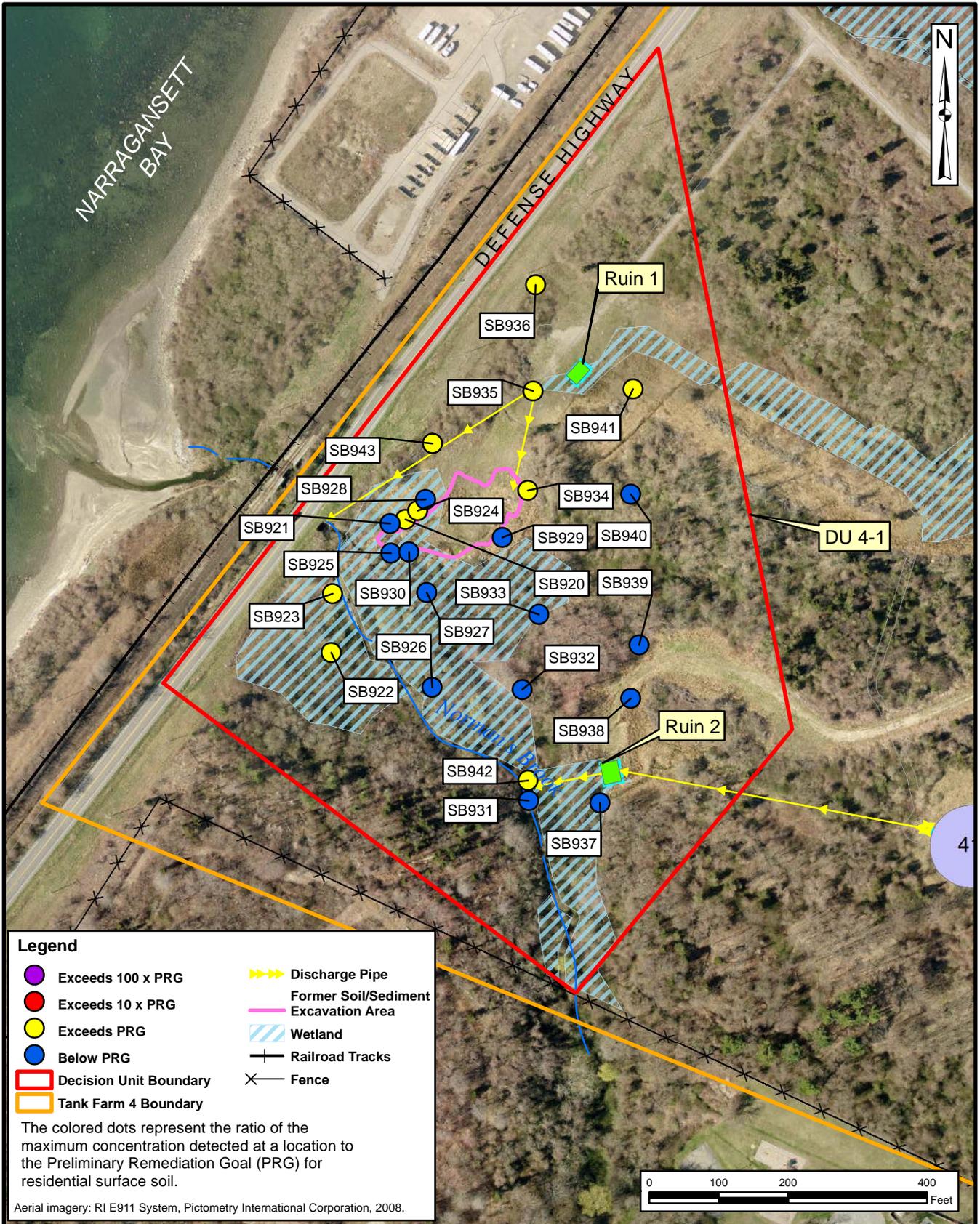


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

ARSENIC IN SUBSURFACE SOIL vs. INDUSTRIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
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FIGURE NUMBER	
2-6	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Discharge Pipe
- ▭ Former Soil/Sediment Excavation Area
- Wetland
- Railroad Tracks
- ✕ Fence

The colored dots represent the ratio of the maximum concentration detected at a location to the Preliminary Remediation Goal (PRG) for residential surface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

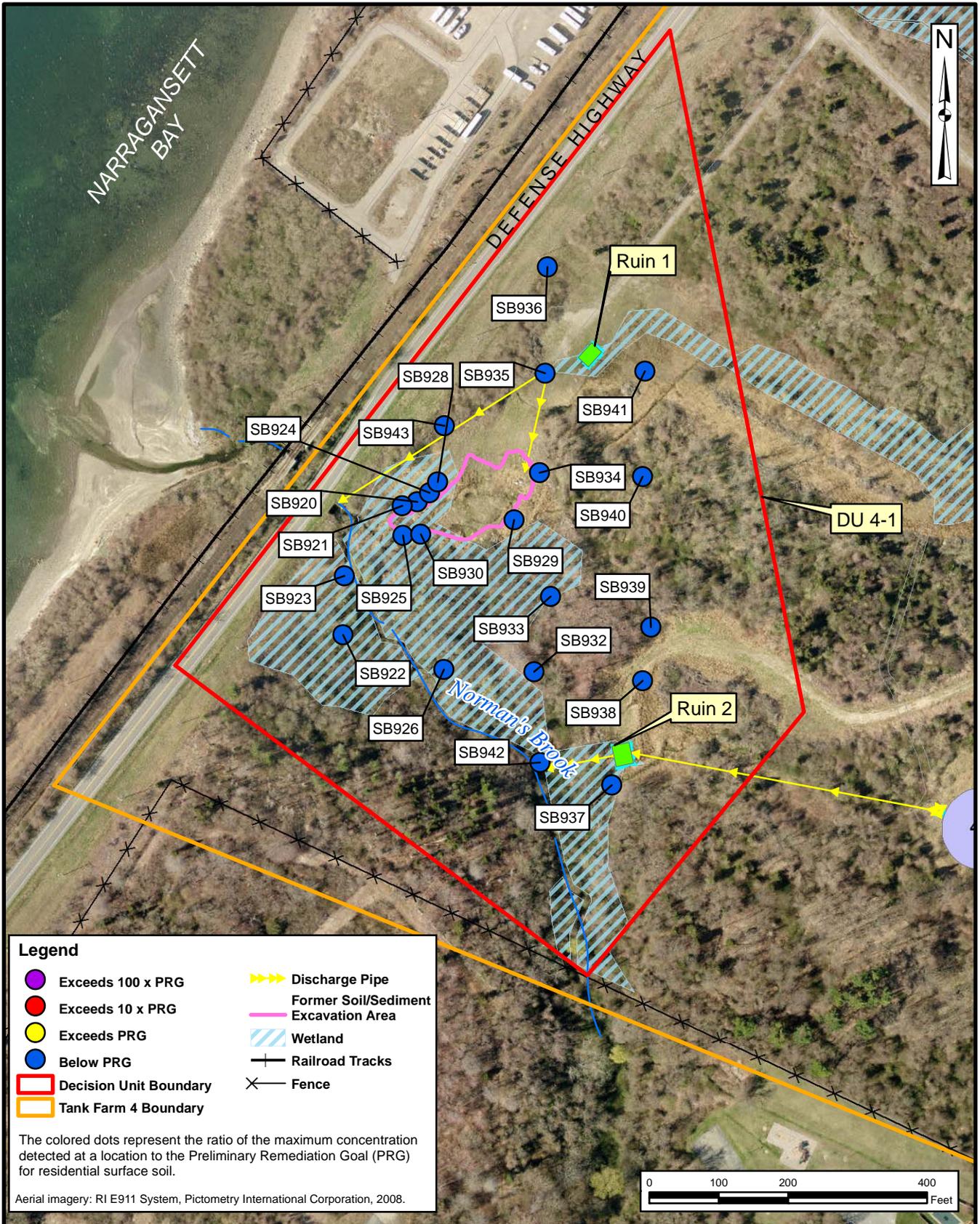


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

MANGANESE IN SURFACE SOIL vs. RESIDENTIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
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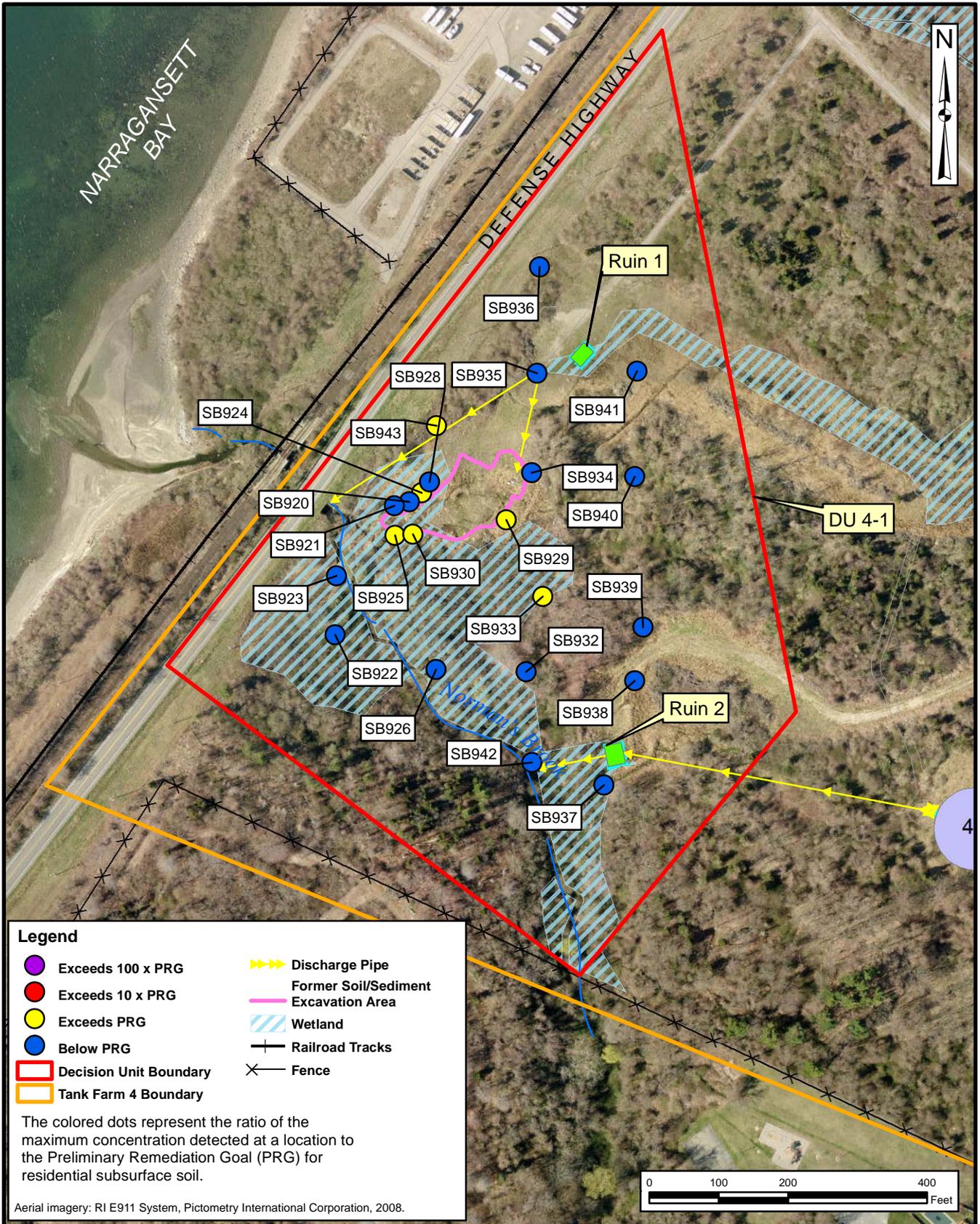


NAVAL STATION NEWPORT
 PORTSMOUTH, RHODE ISLAND

MANGANESE IN SURFACE SOIL vs. INDUSTRIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
 FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
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REV	DATE
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FIGURE NUMBER	
2-8	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- ➔➔➔ Discharge Pipe
- Former Soil/Sediment
- Excavation Area
- Wetland
- Railroad Tracks
- ✕ Fence

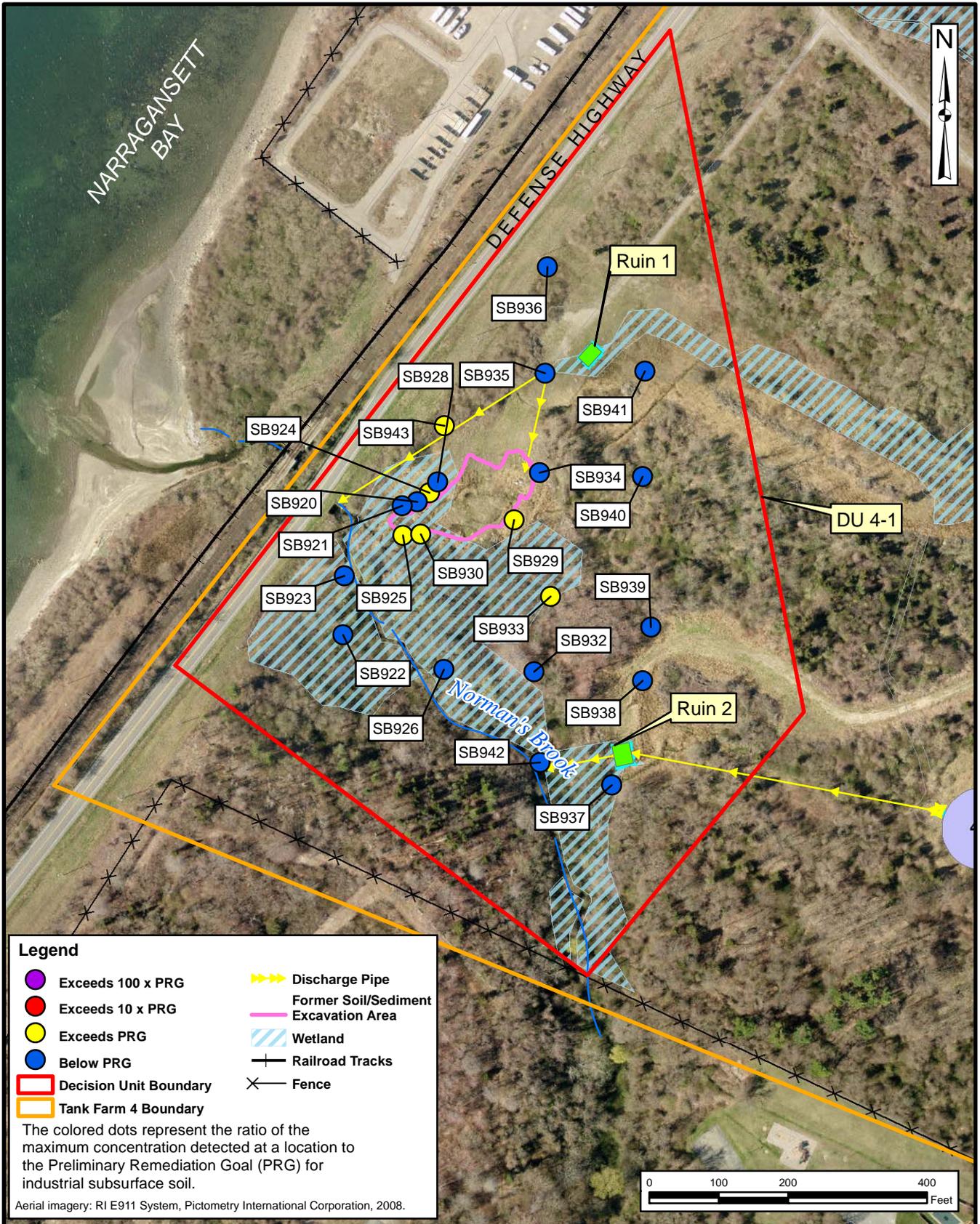
The colored dots represent the ratio of the maximum concentration detected at a location to the Preliminary Remediation Goal (PRG) for residential subsurface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.



NAVAL STATION NEWPORT
 PORTSMOUTH, RHODE ISLAND
**MANGANESE IN SUBSURFACE SOIL
 vs. RESIDENTIAL PRG**
 DU 4-1, SITE 12 - TANK FARM 4
 FEASIBILITY STUDY

SCALE PER SCALE BAR	
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FIGURE NUMBER	
2-9	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Discharge Pipe
- Former Soil/Sediment
- Wetland
- +— Railroad Tracks
- X— Fence

The colored dots represent the ratio of the maximum concentration detected at a location to the Preliminary Remediation Goal (PRG) for industrial subsurface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

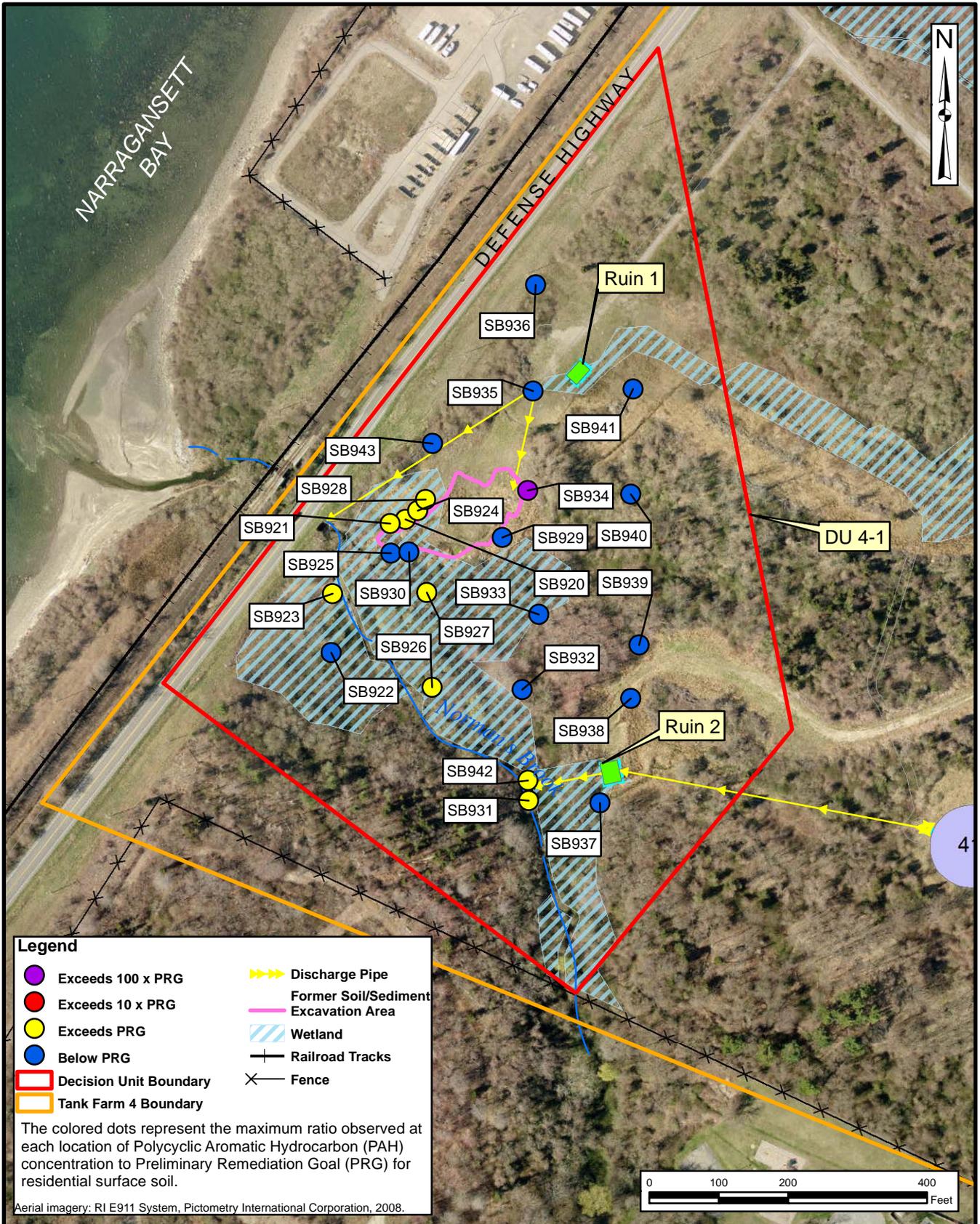


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

**MANGANESE IN SUBSURFACE SOIL
vs. INDUSTRIAL PRG**

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
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REV	DATE
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FIGURE NUMBER	
2-10	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- ➔➔➔ Discharge Pipe
- Former Soil/Sediment Excavation Area
- Wetland
- Railroad Tracks
- ✕ Fence

The colored dots represent the maximum ratio observed at each location of Polycyclic Aromatic Hydrocarbon (PAH) concentration to Preliminary Remediation Goal (PRG) for residential surface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

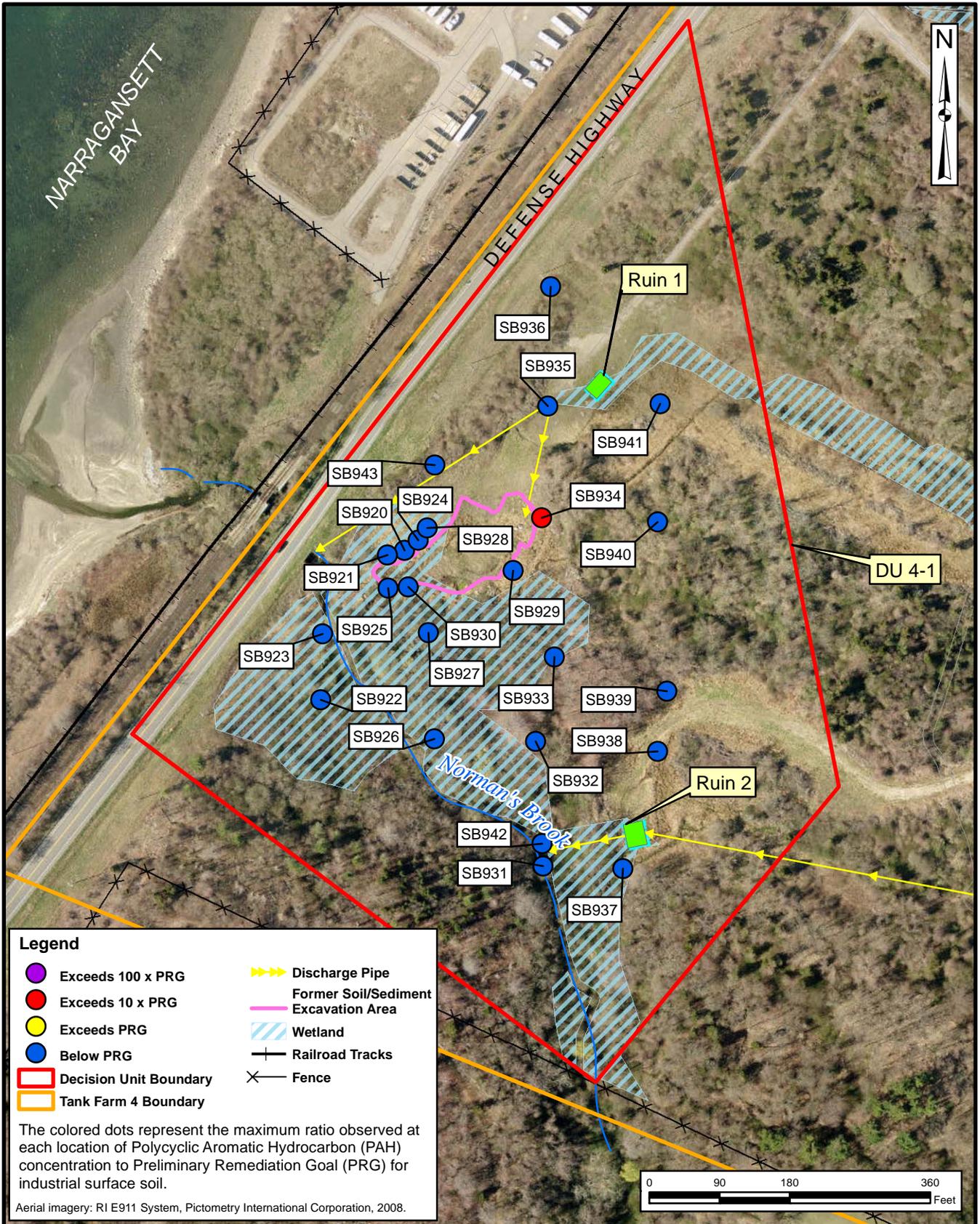


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

PAHs IN SURFACE SOIL vs. RESIDENTIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
I:_DU4-1_PAH_SURF_RES_PRG.MXD	
REV	DATE
0	07/11/12
FIGURE NUMBER	
2-11	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Discharge Pipe
- Former Soil/Sediment
- Excavation Area
- Wetland
- Railroad Tracks
- Fence

The colored dots represent the maximum ratio observed at each location of Polycyclic Aromatic Hydrocarbon (PAH) concentration to Preliminary Remediation Goal (PRG) for industrial surface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

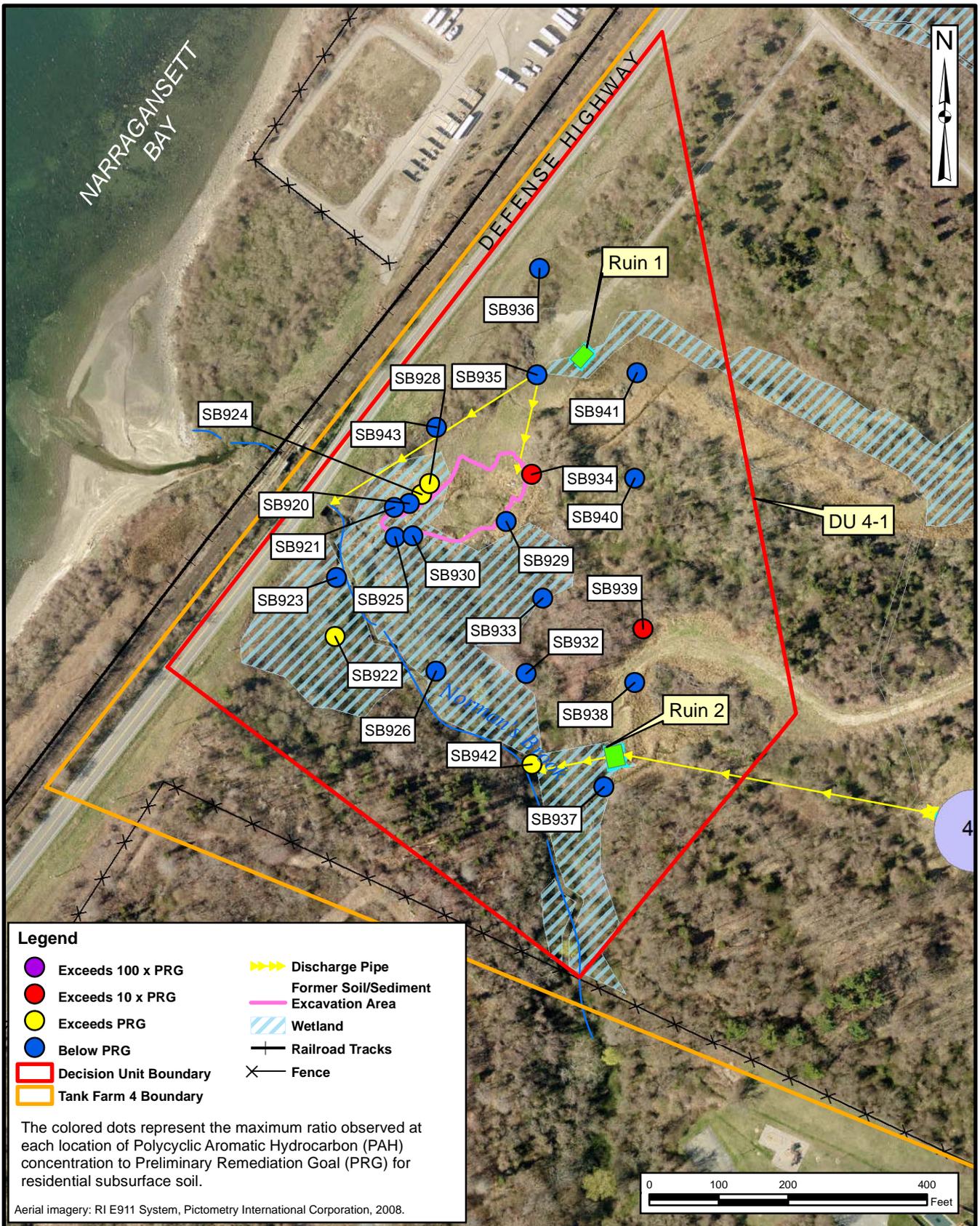


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

PAHs IN SURFACE SOIL vs. INDUSTRIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
I:\DU4-1_PAH_SURF_IND_PRG.MXD	
REV	DATE
0	07/11/12
FIGURE NUMBER	
2-12	

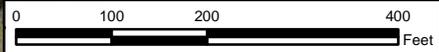


Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Discharge Pipe
- Former Soil/Sediment
- Excavation Area
- Wetland
- Railroad Tracks
- ✕ Fence

The colored dots represent the maximum ratio observed at each location of Polycyclic Aromatic Hydrocarbon (PAH) concentration to Preliminary Remediation Goal (PRG) for residential subsurface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

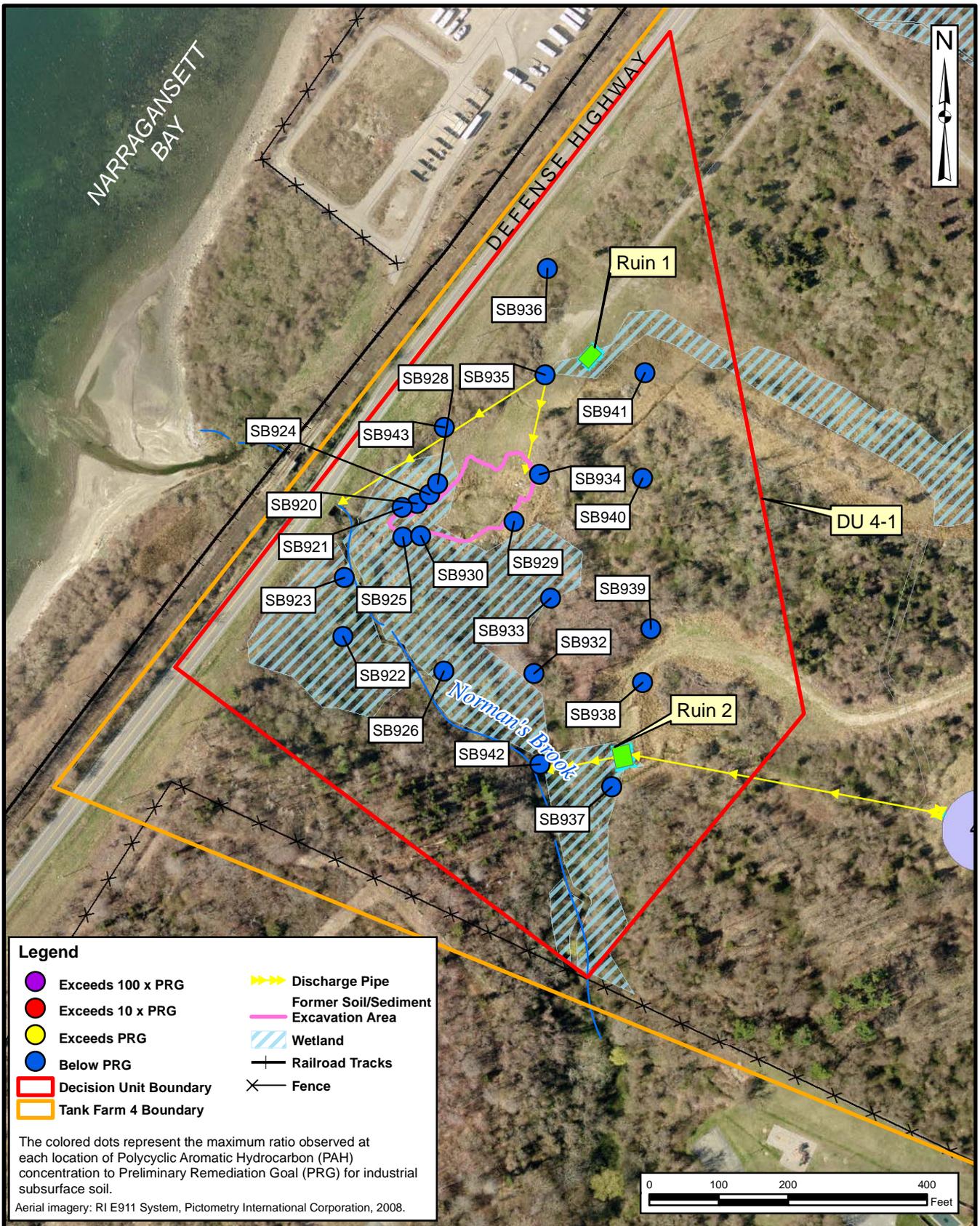


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

PAHs IN SUBSURFACE SOIL vs. RESIDENTIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
I:\12DU4-1_PAH_SUB_RES_PRG.MXD	
REV	DATE
0	07/11/12
FIGURE NUMBER	
2-13	



Legend

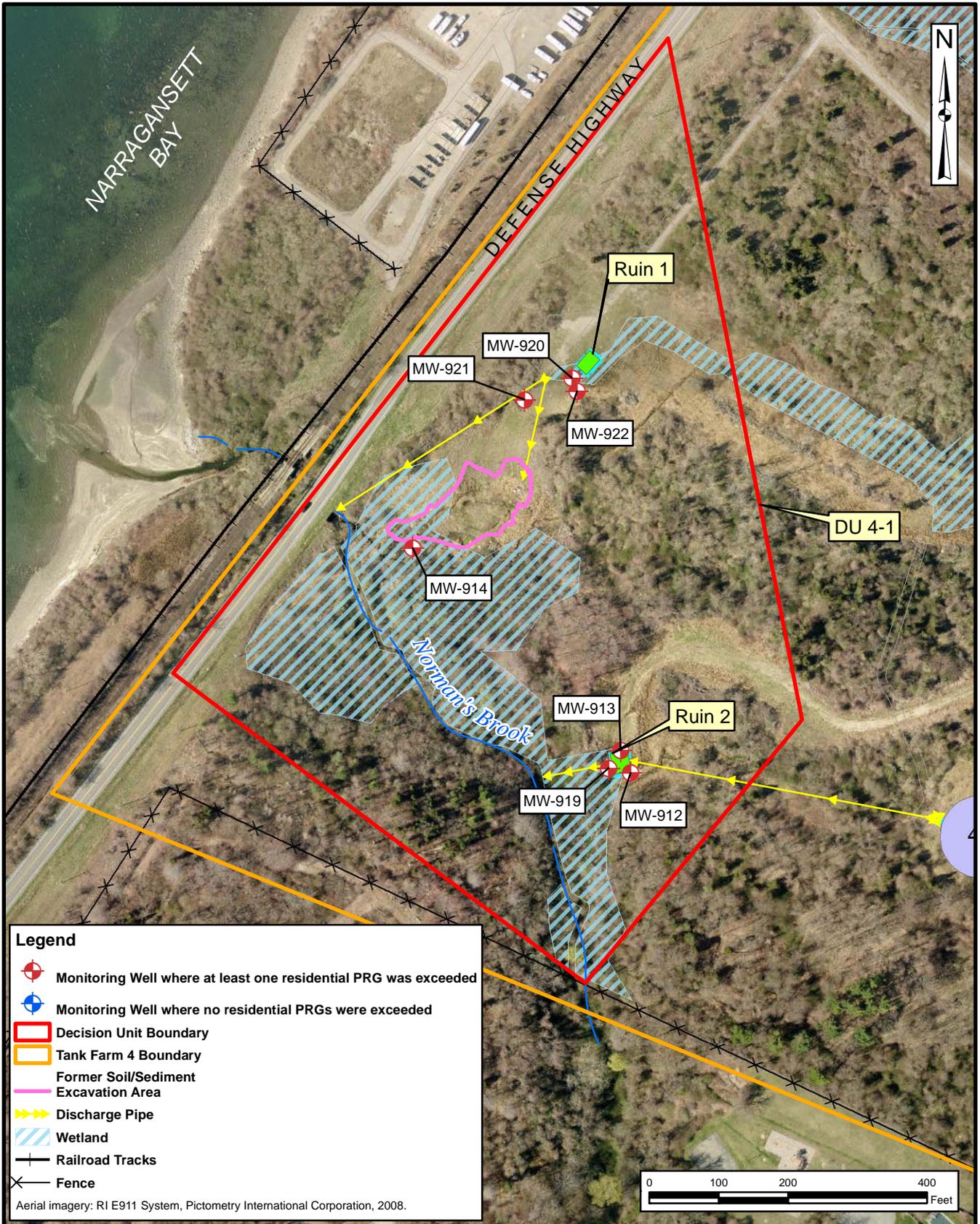
- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Discharge Pipe
- Former Soil/Sediment Excavation Area
- Wetland
- Railroad Tracks
- Fence

The colored dots represent the maximum ratio observed at each location of Polycyclic Aromatic Hydrocarbon (PAH) concentration to Preliminary Remediation Goal (PRG) for industrial subsurface soil.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.



 TETRA TECH	NAVAL STATION NEWPORT PORTSMOUTH, RHODE ISLAND	SCALE PER SCALE BAR
	PAHs IN SUBSURFACE SOIL vs. INDUSTRIAL PRG	FILE RL\DU4-1_PAH_SUB_IND_PRG.MXD
	DU 4-1, SITE 12 - TANK FARM 4 FEASIBILITY STUDY	REV DATE 0 07/11/12
		FIGURE NUMBER 2-14



Legend

- Monitoring Well where at least one residential PRG was exceeded
- Monitoring Well where no residential PRGs were exceeded
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Former Soil/Sediment Excavation Area
- Discharge Pipe
- Wetland
- Railroad Tracks
- Fence

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

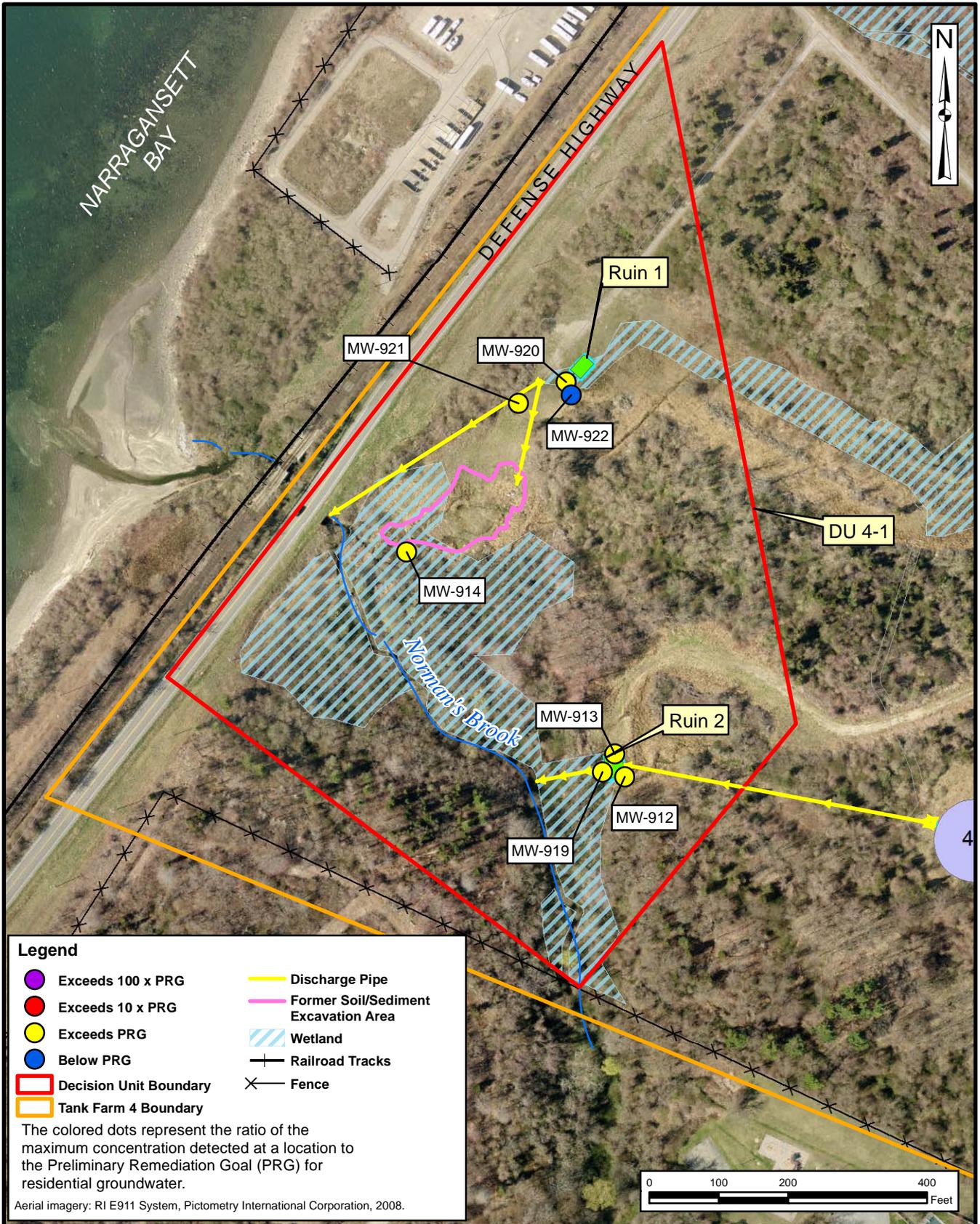


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

**MONITORING WELLS WHERE
RESIDENTIAL PRGs WERE EXCEEDED**

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE I:_DU4-1_MW_EXCEED_RES_PRG.MXD	
REV	DATE
0	07/11/12
FIGURE NUMBER 2-15	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Discharge Pipe
- Former Soil/Sediment Excavation Area
- Wetland
- +— Railroad Tracks
- X— Fence

The colored dots represent the ratio of the maximum concentration detected at a location to the Preliminary Remediation Goal (PRG) for residential groundwater.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.



NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

COBALT IN GROUNDWATER vs. RESIDENTIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
I:_DU4-1_COB_GW_RES_PRG.MXD	
REV	DATE
0	07/11/12
FIGURE NUMBER	
2-16	



Legend

- Exceeds 100 x PRG
- Exceeds 10 x PRG
- Exceeds PRG
- Below PRG
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Discharge Pipe
- Former Soil/Sediment Excavation Area
- Wetland
- +— Railroad Tracks
- X— Fence

The colored dots represent the ratio of the maximum concentration detected at a location to the Preliminary Remediation Goal (PRG) for residential groundwater.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.



NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

IRON IN GROUNDWATER vs. RESIDENTIAL PRG

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
I:\DU4-1_IRON_GW_RES_PRG.MXD	
REV	DATE
0	07/11/12
FIGURE NUMBER	
2-17	



Legend

Exceeds 100 x PRG	Discharge Pipe
Exceeds 10 x PRG	Former Soil/Sediment Excavation Area
Exceeds PRG	Wetland
Below PRG	Railroad Tracks
Decision Unit Boundary	Fence
Tank Farm 4 Boundary	

The colored dots represent the ratio of the maximum concentration detected at a location to the Preliminary Remediation Goal (PRG) for residential groundwater.

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

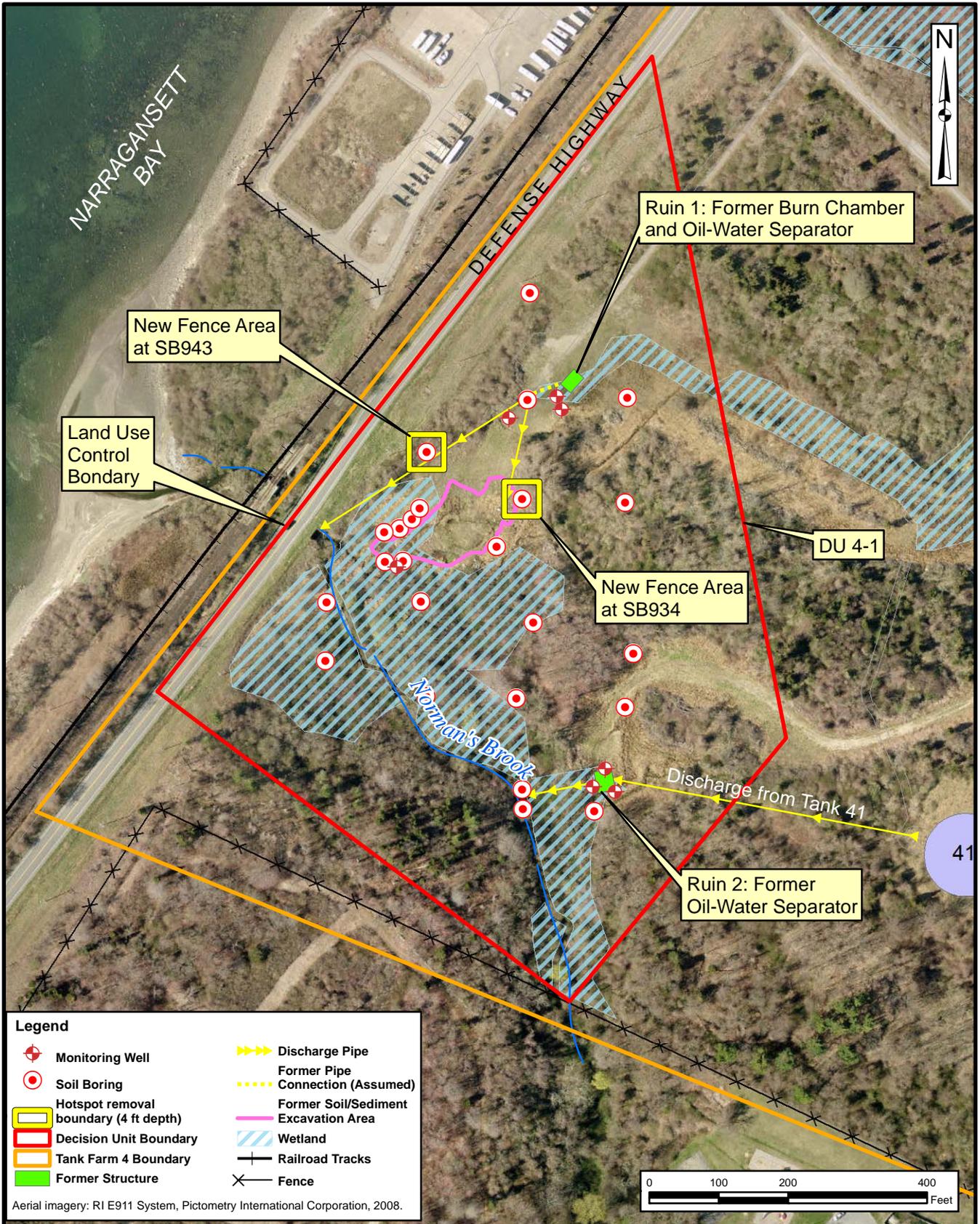


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

**MANGANESE IN GROUNDWATER
vs. RESIDENTIAL PRG**

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	
I:\02698\FS.DR.12\DU4-1_MN_GW_RES_PRG.MXD	
REV	DATE
0	07/11/12
FIGURE NUMBER	
2-18	



Legend

- ◆ Monitoring Well
- Soil Boring
- Hotspot removal boundary (4 ft depth)
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Former Structure
- ▶▶▶ Discharge Pipe
- - - Former Pipe Connection (Assumed)
- Former Soil/Sediment Excavation Area
- Wetland
- +— Railroad Tracks
- X Fence

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

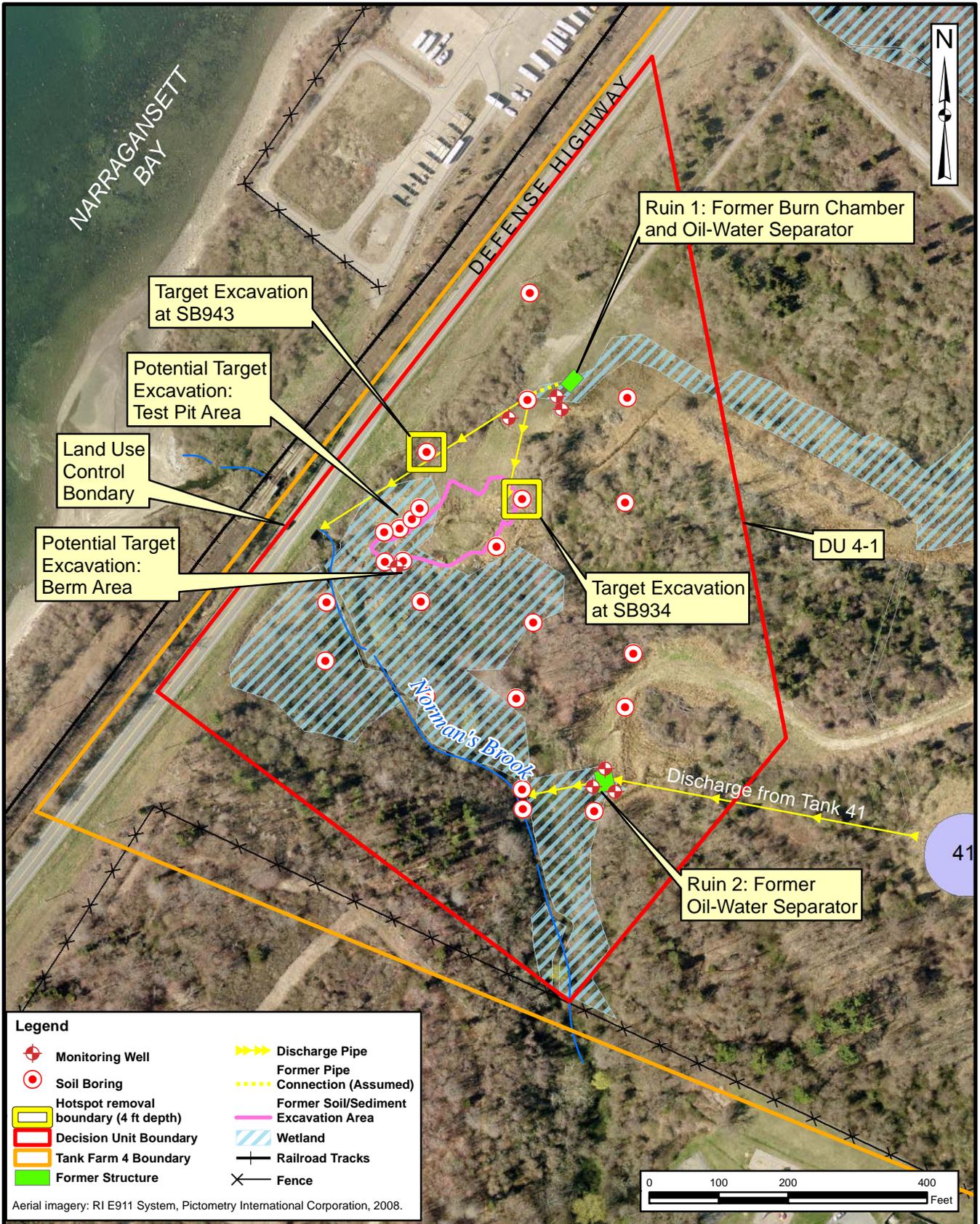


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

REMEDIAL ACTION SUMMARY, ALTERNATIVE SO2

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE I:\12DU4-1_ALT_SO2.MXD	
REV 0	DATE 02/01/13
FIGURE NUMBER 4-1	



Legend

- Monitoring Well
- Soil Boring
- Hotspot removal boundary (4 ft depth)
- Decision Unit Boundary
- Tank Farm 4 Boundary
- Former Structure
- Discharge Pipe
- Former Pipe
- Connection (Assumed)
- Former Soil/Sediment
- Excavation Area
- Wetland
- Railroad Tracks
- Fence

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

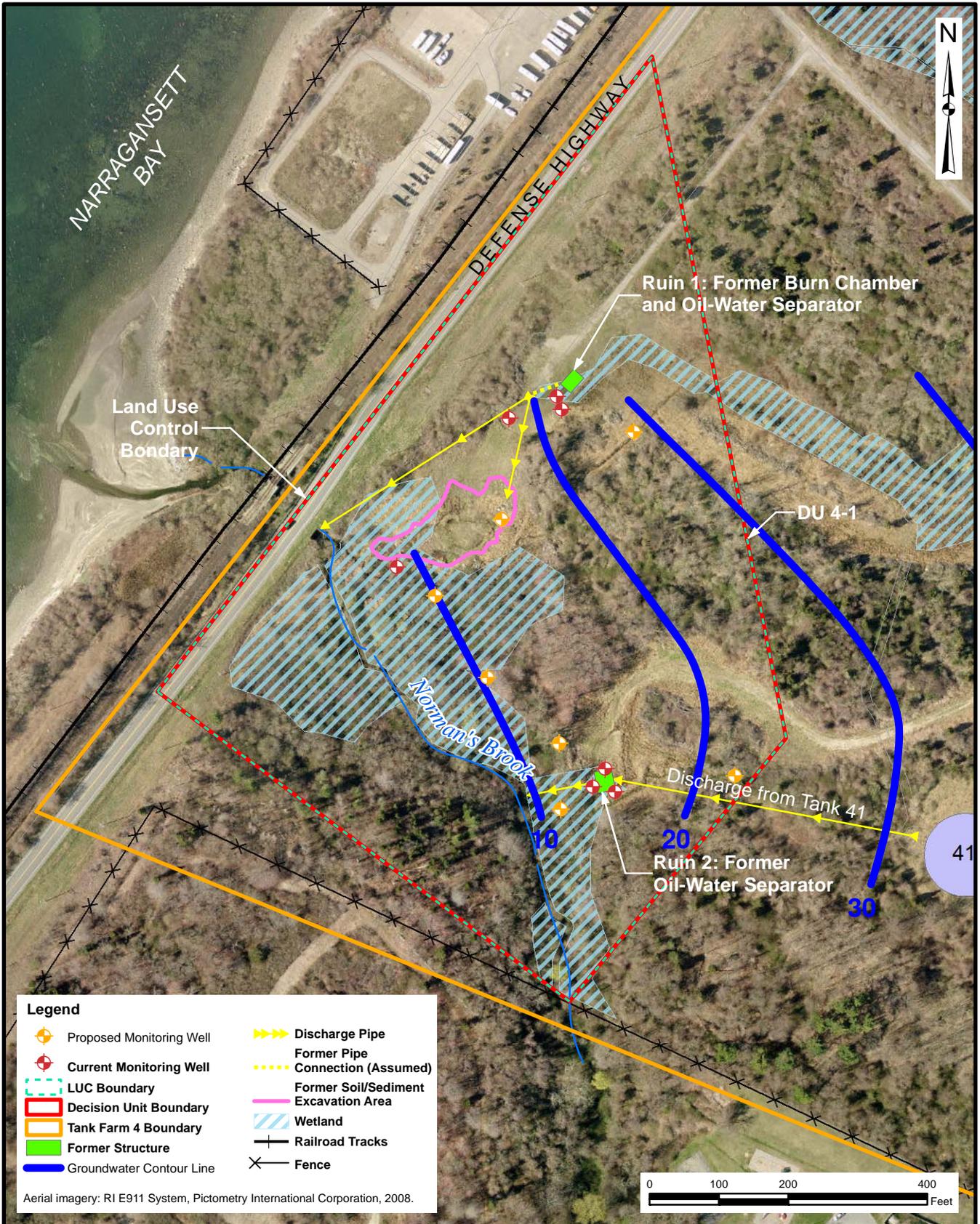


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

REMEDIAL ACTION SUMMARY, ALTERNATIVE SO3

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE I:\...DU4-1_ALT_SO3.MXD	
REV 0	DATE 05/03/13
FIGURE NUMBER 4-2	



Legend

	Proposed Monitoring Well		Discharge Pipe
	Current Monitoring Well		Former Pipe
	LUC Boundary		Connection (Assumed)
	Decision Unit Boundary		Former Soil/Sediment Excavation Area
	Tank Farm 4 Boundary		Wetland
	Former Structure		Railroad Tracks
	Groundwater Contour Line		Fence

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.

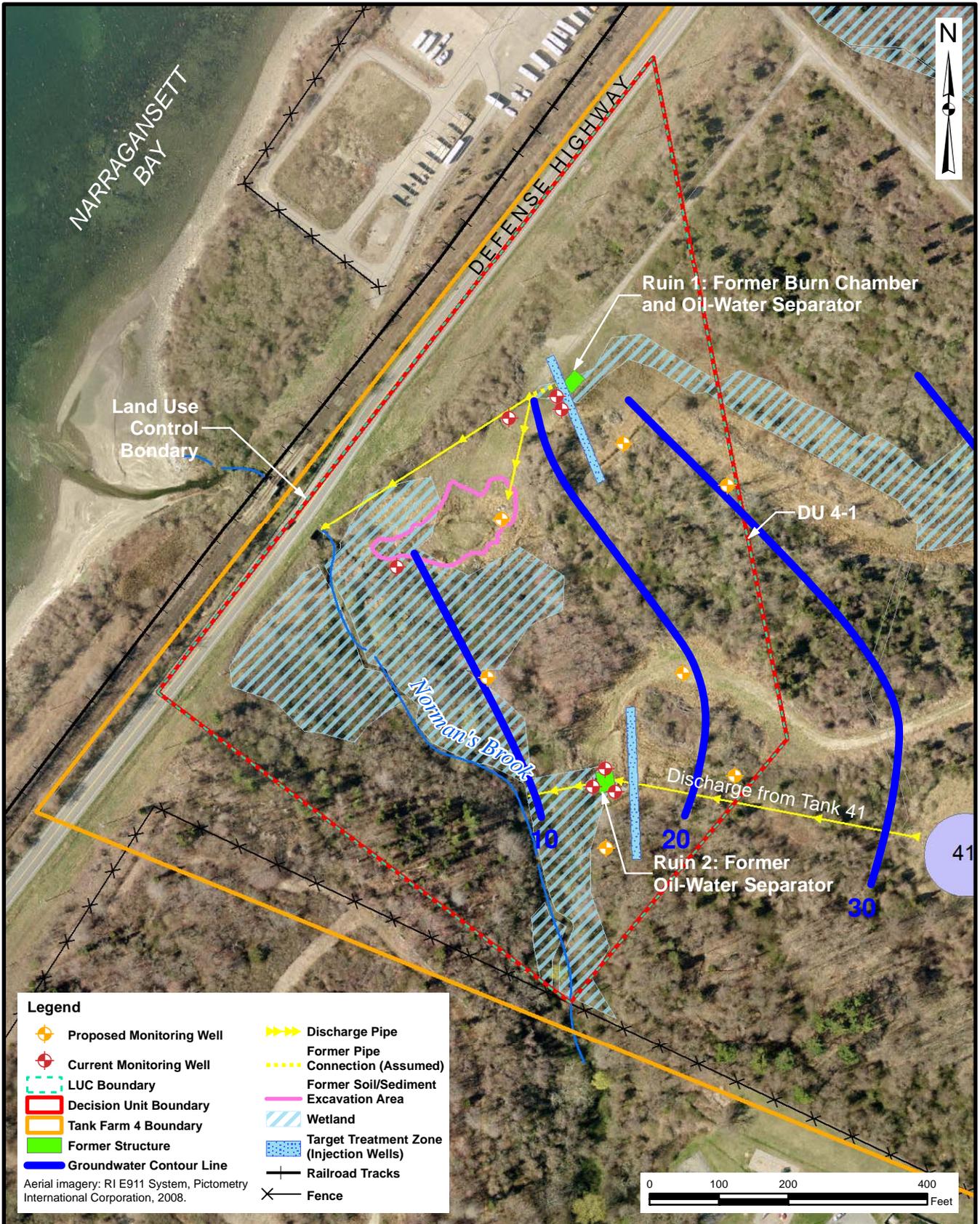


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

SUMMARY OF GROUNDWATER ALTERNATIVE GW 2

SITE 12, TANK FARM 4 – DECISION UNIT 4-1
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	I:\...TF4_DU4-1_ALT_GW_REMEDY.MXD
REV	DATE
0	05/01/13
FIGURE NUMBER	
5-1	



Legend

	Proposed Monitoring Well		Discharge Pipe
	Current Monitoring Well		Former Pipe
	LUC Boundary		Connection (Assumed)
	Decision Unit Boundary		Former Soil/Sediment
	Tank Farm 4 Boundary		Excavation Area
	Former Structure		Wetland
	Groundwater Contour Line		Target Treatment Zone (Injection Wells)
Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.			Railroad Tracks
	Fence		



TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

SUMMARY OF GROUNDWATER ALTERNATIVE GW 3

SITE 12, TANK FARM 4 – DECISION UNIT 4-1
FEASIBILITY STUDY

SCALE PER SCALE BAR	
FILE	I:\...TF4_DU4-1_ALT_GW_REMEDY_FIG5-2.MXD
REV	DATE
0	05/03/13
FIGURE NUMBER	
5-2	

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APPENDIX A
BACKGROUND INFORMATION

A1 - HISTORICAL PHOTOS AND DRAWINGS



Tank Farm 4
During
construction,
ca 1940s.

Note
earthworks
and land use
surrounding
the site.

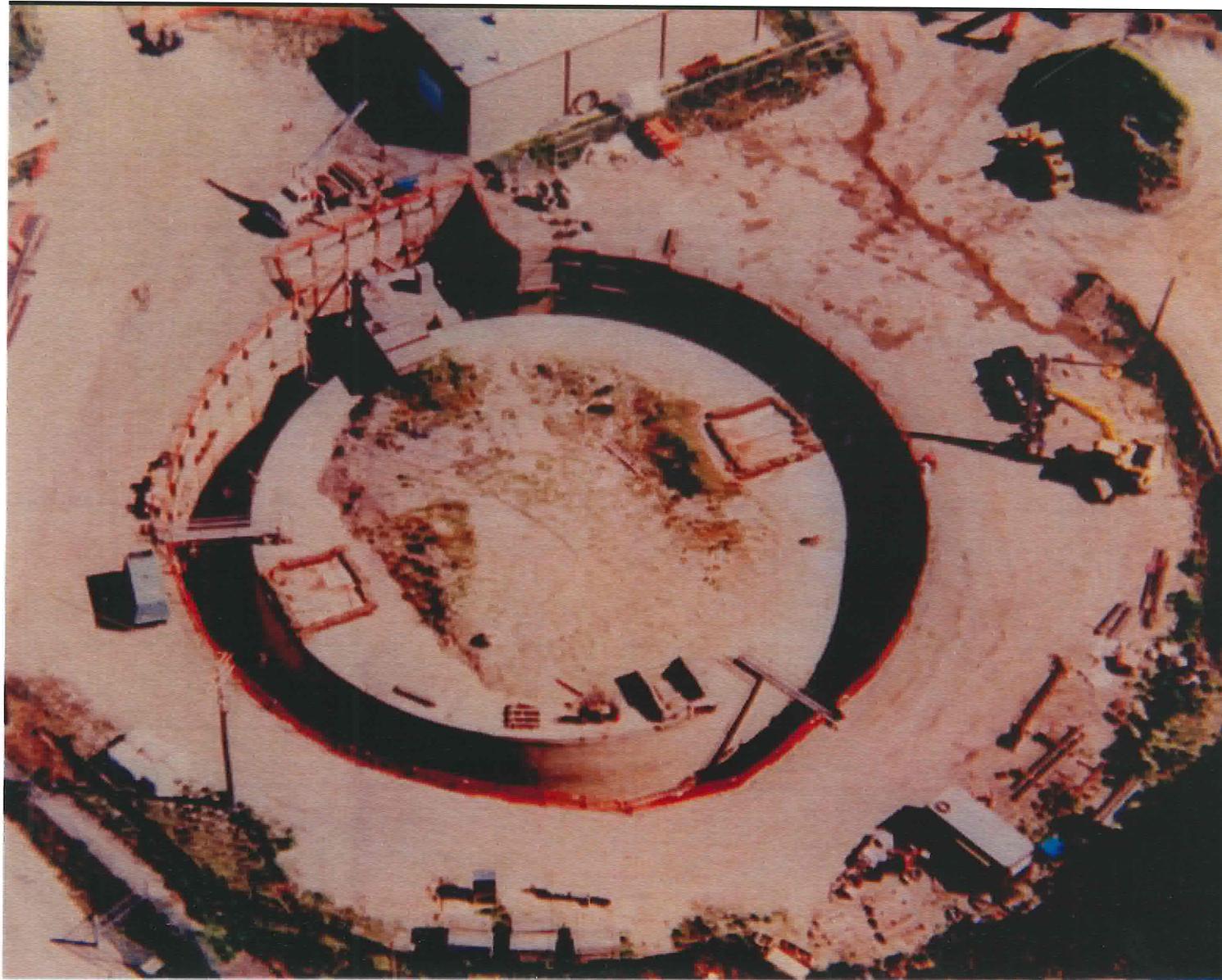
Oblique view
is to the east



Tank Farm 5 during construction, ca 1940s.

Note earthworks and land use surrounding the site.

Oblique view is to the east



Tank 53,
Tank Farm 5
During soil
removal
action, ca
1994.

Note
Treatment
building at
top of frame

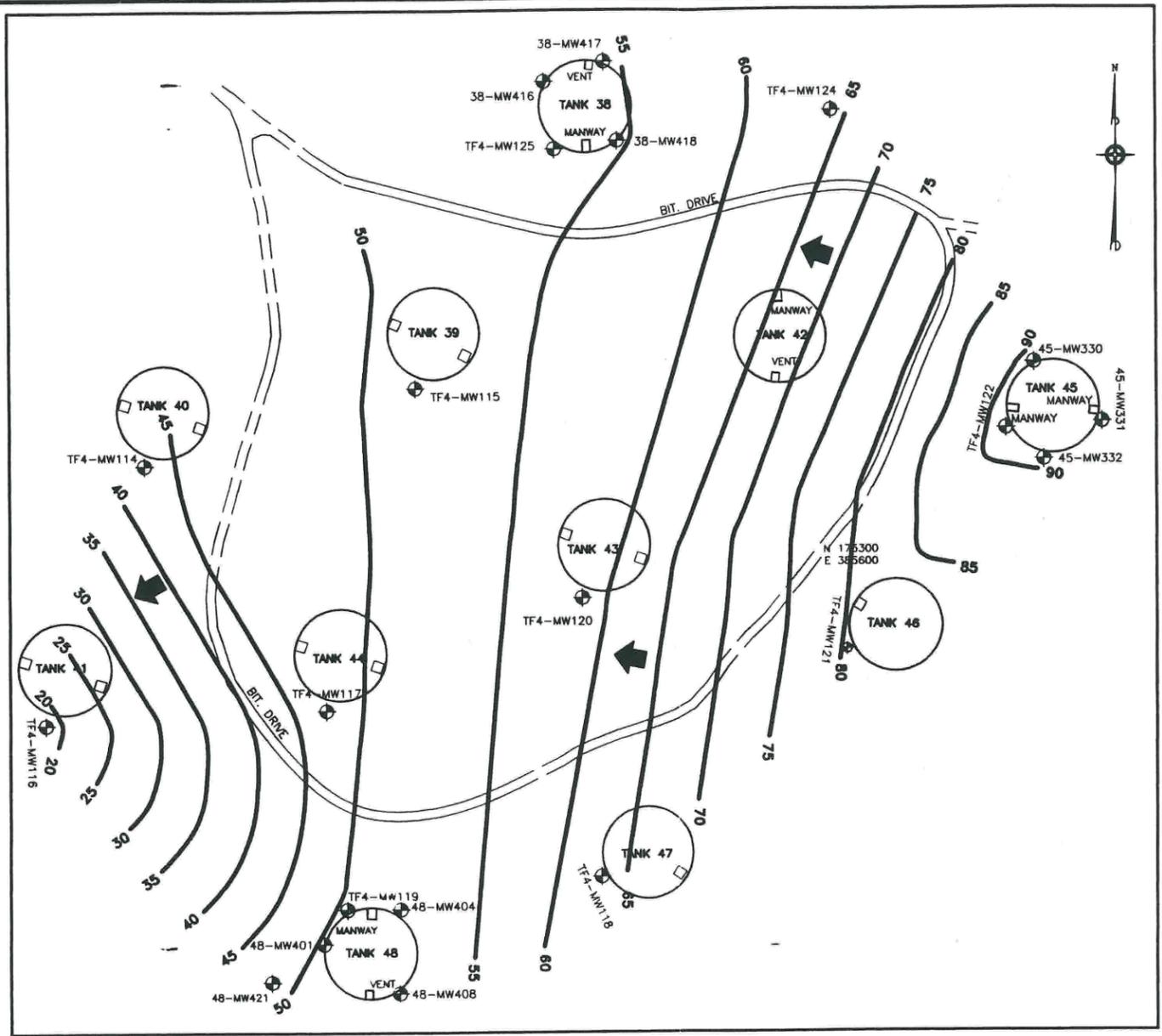
Oblique view
is to the
southeast



Interior of
tank after
cleaning,
likely to be
Tank 53, ca
1994.

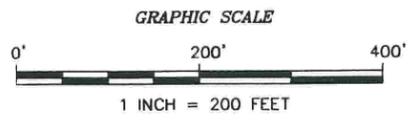
Note scale
of size using
manway on
far side of
tank.

- LEGEND**
- 48-MW422  MONITORING WELL LOCATION WITH IDENTIFIER
 - 35  INTERPRETED GROUNDWATER CONTOUR LINE
 -  INTERPRETED GROUNDWATER FLOW DIRECTION



ELEVATIONS

I. D.	GW ELEV.
TF4-MW 124	63.54
TF4-MW 125	54.62
38-MW 416	54.63
38-MW 417	54.63
38-MW 418	54.63
TF4-MW 115	51.37
TF4-MW 114	44.28
TF4-MW 116	18.15
TF4-MW 120	57.96
TF4-MW 117	48.60
TF4-MW 122	91.66
45-MW 330	91.70
45-MW 331	91.57
45-MW 332	90.55
TF4-MW 121	80.18
TF4-MW 118	62.90
TF4-MW 119	50.16
48-MW 401	50.17
48-MW 404	50.12
48-MW 408	50.15
48-MW 421	49.13



- NOTES:**
- 1) BASE MAP FROM PLAN BY LOUIS FEDERICI & ASSOCIATES, 235 PROMENADE STREET, PROVIDENCE, RI & AVAILABLE PLANS.
 - 2) BITUMINOUS DRIVE LOCATION FROM ABOVE PLAN & AVAILABLE PLANS AND IS TO BE CONSIDERED APPROXIMATE.
 - 3) GRID COORDINATES BASED ON THE STATE OF RHODE ISLAND GRID COORDINATE SYSTEM (NAD 1983).
 - 4) GROUNDWATER ELEVATIONS FROM TANK 42 WERE NOT USED FOR THIS MAP DUE TO PUMPING OF THE RING DRAIN AT THE TIME OF GROUNDWATER MEASUREMENTS.
 - 5) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE
 - 6) PLAN NETC TO BE USED FOR DESIGN.

INTERPRETED WATER TABLE MAP - DEC. 18, 1995	
NETC-NEWPORT, RI	
SUPPLEMENTAL SITE INVESTIGATION REPORT	
TANK FARM 4	
DRAWN BY: R.G. DEWSNAP	REV: 1
CHECKED BY: R. CLEAVER	DATE: 14 OCT 98
SCALE: 1" = 200'	FILE NO.: G:\DWG\NETC\SSI\GW_CONTR

FIGURE A-1

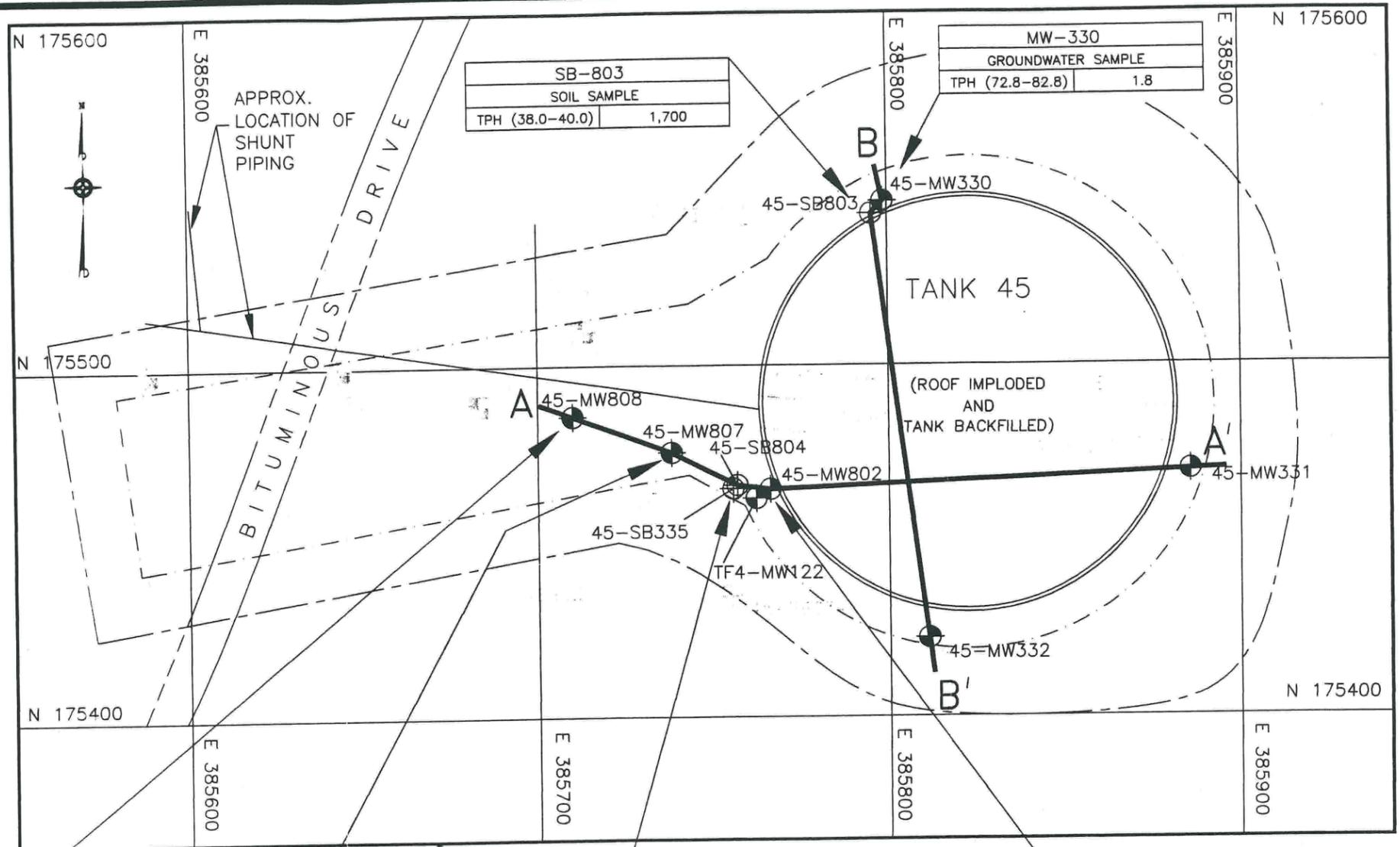


TETRA TECH NUS, INC.

55 Jonspin Road
Wilmington, MA 01887
(978)658-7899

- LEGEND**
- 45-SB333 SOIL BORING LOCATION WITH IDENTIFIER
 - 45-MW330 MONITORING WELL LOCATION WITH IDENTIFIER
 - 45-SS02 SURFACE SOIL SAMPLE LOCATION WITH IDENTIFIER
 - P1 SOIL PROBING SAMPLE LOCATION WITH IDENTIFIER
 - LIMITS OF BEDROCK RAMP
 - LIMITS OF EXCAVATION
 - TPH TOTAL PETROLEUM HYDROCARBONS
 - ND NOT DETECTED

SB-801 / MW-801		SOIL BORING LOCATION / MONITORING WELL LOCATION
SOIL SAMPLE		TYPE OF SAMPLE
TPH (37.5-39.5)	4,400	CONTAMINANT CONCENTRATION
GROUNDWATER SAMPLE		TYPE OF SAMPLE
TPH (51.0-61.0)	ND	CONTAMINANT CONCENTRATION
LEAD (51.0-61.0) (Unfiltered)	18.7	CONTAMINANT CONCENTRATION



SB-808 / MW-808	
SOIL SAMPLE	
TPH (19.0-21.0)	3,700
GROUNDWATER SAMPLE	
TPH (88.3-98.3)	ND

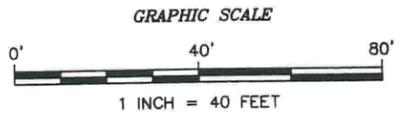
SB-807 / MW-807	
SOIL SAMPLE	
TPH (14.0-16.0)	17,000
TPH (24.0-25.0)	21,000
GROUNDWATER SAMPLE	
TPH (89.7-99.7)	ND

SB-804	
SOIL SAMPLE	
TPH (14.0-16.0)	5,700

SB-802 / MW-802	
SOIL SAMPLE	
TPH (36.0-38.0)	17,000
GROUNDWATER SAMPLE	
TPH (71.5-96.5)	3.6
LEAD (71.5-96.5) (Unfiltered)	18.7

MW-330	
GROUNDWATER SAMPLE	
TPH (72.8-82.8)	1.8

SB-803	
SOIL SAMPLE	
TPH (38.0-40.0)	1,700



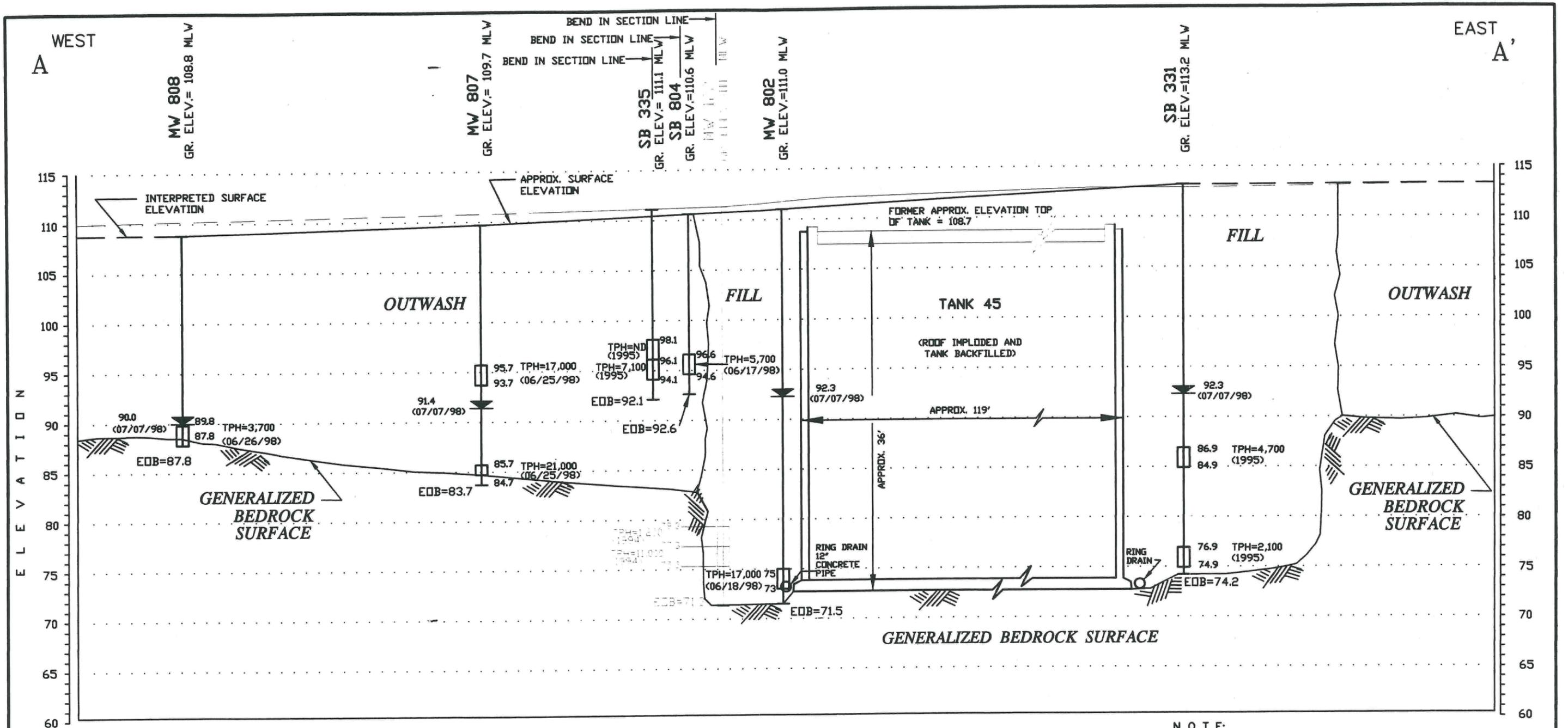
- NOTES:**
- 1) THE DATA DEPICTED INCLUDES TPH CONCENTRATIONS FOR SOIL AND GROUNDWATER, AND GROUNDWATER CONTAMINANTS AND CONCENTRATIONS EXCEEDING THE RIDEM GA GROUNDWATER QUALITY STANDARDS (GWQS) AND / OR PREVENTATIVE ACTION LIMITS (PAL).
 - 2) SOIL SAMPLE TPH CONCENTRATION UNITS IN mg / Kg; GROUNDWATER SAMPLE TPH CONCENTRATION UNITS IN mg / L AND ALL OTHER GROUNDWATER CONTAMINANT CONCENTRATION UNITS IN ug/L.
 - 3) SOIL SAMPLING DEPTH INTERVAL IN FEET BELOW GROUND SURFACE; GROUNDWATER MONITORING WELL SCREENED INTERVAL IN MEAN LOW WATER ELEVATIONS (FEET).
 - 4) PLAN NOI TO BE USED FOR DESIGN.
 - 5) LOCATIONS FROM BASE MAP BY LOUIS FEDERICI & ASSOCIATES, 235 PROMENADE STREET, PROVIDENCE, RI.
 - 6) GRID COORDINATES BASED ON THE STATE OF RHODE ISLAND GRID COORDINATE SYSTEM (NAD 1983).
 - 7) ABANDONED MONITORING WELLS, FORMER SOIL BORING AND SURFACE SOIL SAMPLE LOCATIONS, AND TANK FEATURES SHOWN IN GRAY.

SOIL & GROUNDWATER CONTAMINANTS (JUNE - JULY, 1998); CROSS-SECTION LOCUS PLAN - TANK 45			
NETC-NEWPORT, RI			
SUPPLEMENTAL SITE INVESTIGATION REPORT - TANK FARM 4			
DRAWN BY:	R.G. DEWSNAP	REV.:	0
CHECKED BY:	P. SVETAKA	DATE:	JANUARY 29, 1999
SCALE:	1" = 40'	FILE NO.:	DWG\NETC\SSI\T45_TPH.DWG

FIGURE A-2

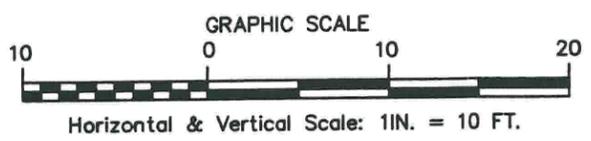
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Wilmington, MA 01887
(508)658-7899



LEGEND

- 86.9
TPH=4,700
(06/25/98)
84.9
SOIL SAMPLE INTERVAL ANALYZED BY LAB WITH ELEVATION AND TPH CONCENTRATION. (DATE SAMPLED)
- 91.6
(07/07/98)
WATER TABLE ELEVATION IN FEET (MLV) (DATE MEASURED)
- FORMER GROUND ELEVATION
- TPH TOTAL PETROLEUM HYDROCARBON (MG/KG)
- MW 103 GROUNDWATER MONITORING WELL NUMBER
- SB 205 SOIL BORING NUMBER
- ND NOT DETECTED
- EOB END OF BORING



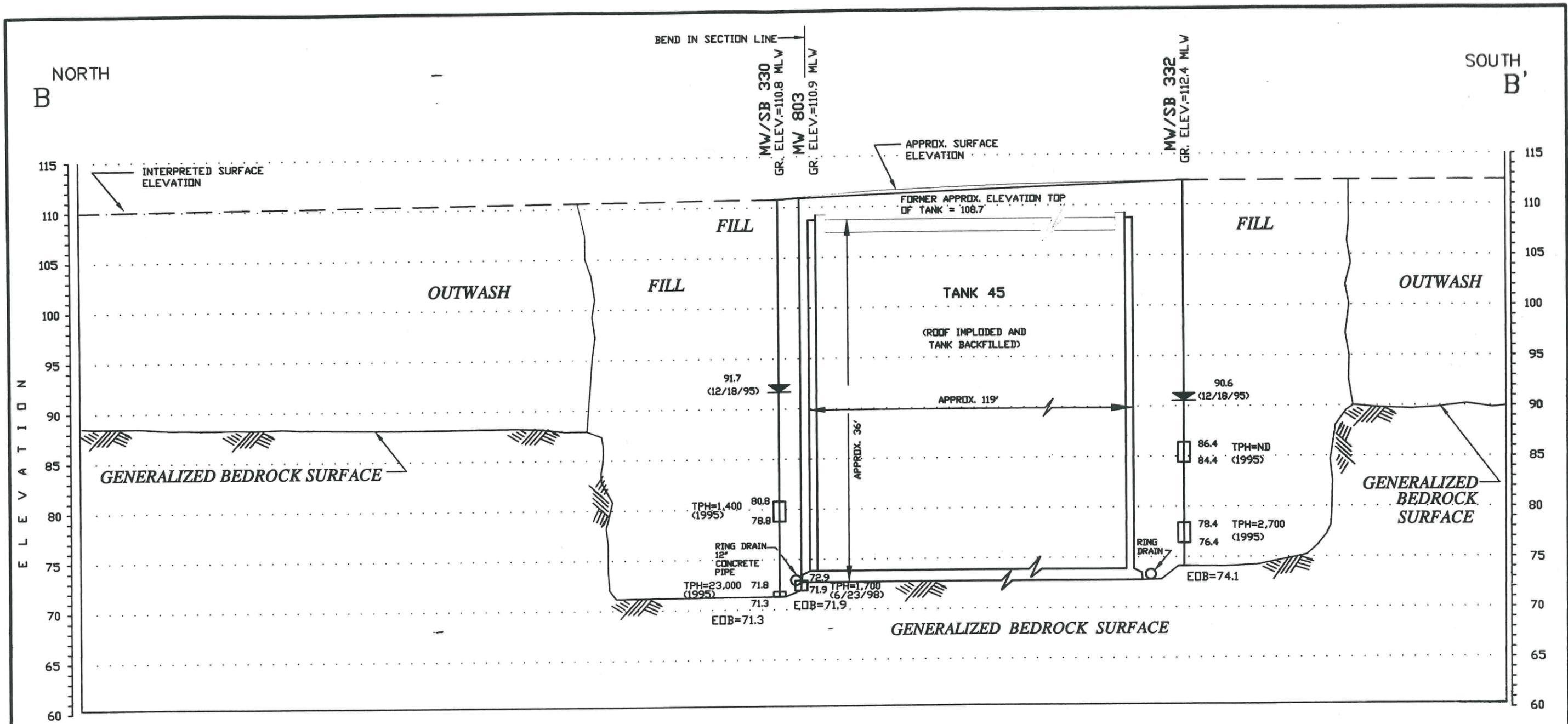
NOTE:

- 1) JULY 7, 1998, WATER LEVEL MEASUREMENTS REPORTED ON FIGURE.
- 2) ALL TPH UNITS IN MILLIGRAMS PER KILOGRAM (MG/KG).
- 3) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.
- 4) PLAN NOI TO BE USED FOR DESIGN.
- 5) FORMER SMAPLE LOCATIONS AND TANK FEATURES SHOWN IN GRAY.

TPH IN SOIL

CROSS-SECTION A-A' - TANK 45		FIGURE A-3	
NETC-NEWPORT, RI		TETRA TECH NUS, INC.	
SUPPLEMENTAL SITE INVESTIGATION REPORT - TANK FARM 4			
DRAWN BY:	D.W. MACDOUGALL	REV.:	0
CHECKED BY:	R. CLEAVER	DATE:	OCTOBER 20, 1998
SCALE:	1" = 10' (APPROX.)	FILE NO.:	DWG\NETC\SSI\XSECT45A.DWG

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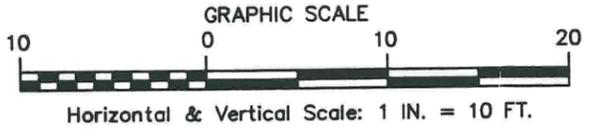


ELEVATION

LEGEND

- 80.8
 TPH=1,400
 (1995)
 78.8
 SOIL SAMPLE INTERVAL ANALYZED BY LAB WITH ELEVATION AND TPH CONCENTRATION. (DATE SAMPLED)
- 91.7
 (12/18/95)

 WATER TABLE ELEVATION IN FEET (MLW) (DATE MEASURED)
- FORMER GROUND ELEVATION
- TPH TOTAL PETROLEUM HYDROCARBON (MG/KG)
- MW 103 GROUNDWATER MONITORING WELL NUMBER
- SB 205 SOIL BORING NUMBER
- ND NOT DETECTED
- EOB END OF BORING



NOTE:

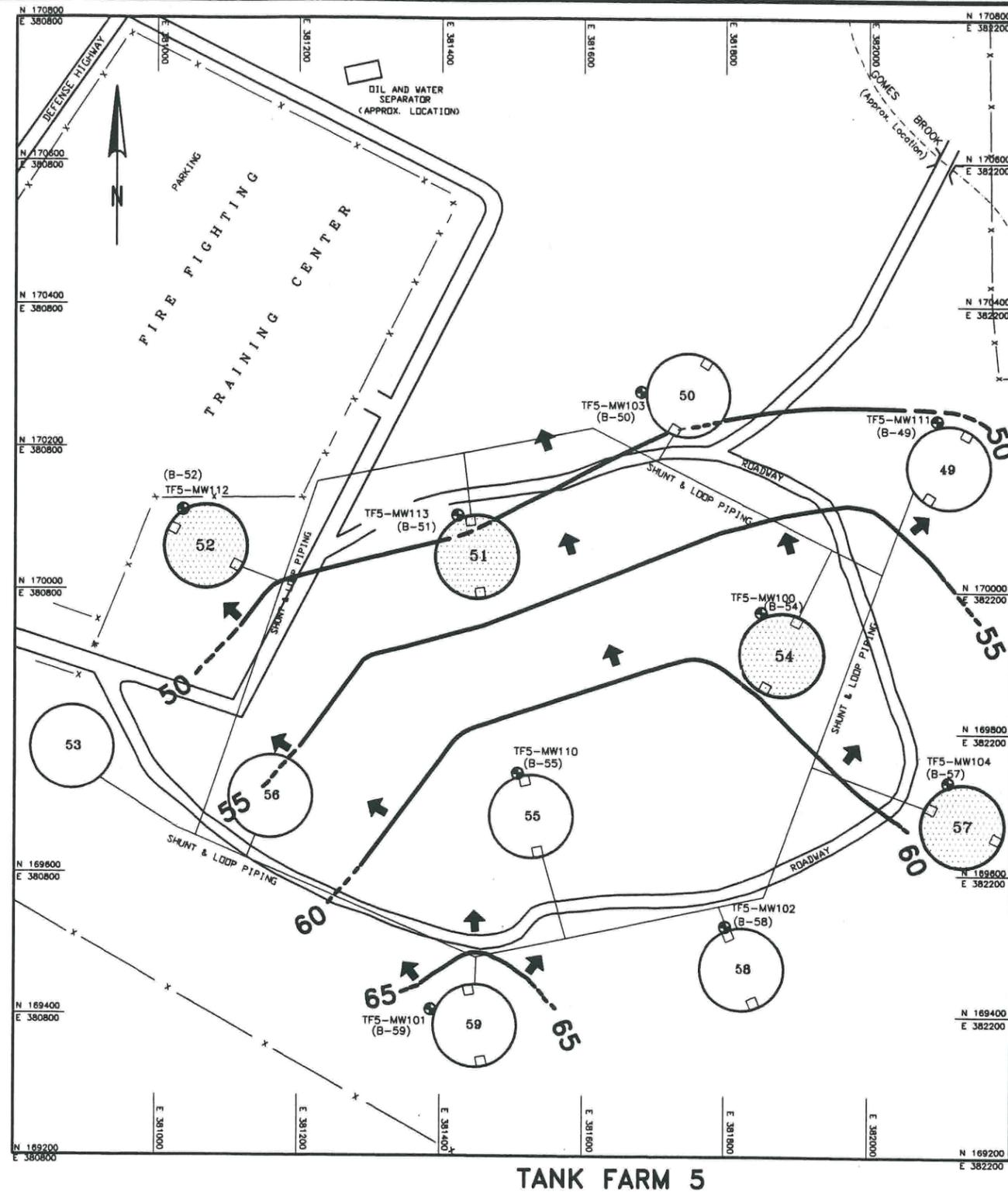
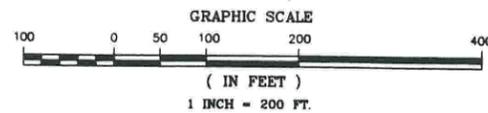
- 1) DEC. 1995, WATER LEVEL MEASUREMENTS REPORTED ON FIGURE.
- 2) ALL TPH UNITS IN MILLIGRAMS PER KILOGRAM (MG/KG).
- 3) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.
- 4) PLAN NOT TO BE USED FOR DESIGN.

TPH IN SOIL

CROSS-SECTION B-B' - TANK 45		FIGURE A-4	
NETC-NEWPORT, RI		TETRA TECH NUS, INC.	
SUPPLEMENTAL SITE INVESTIGATION REPORT - TANK FARM 4			
DRAWN BY:	D.W. MACDOUGALL	REV:	0
CHECKED BY:	R. DEWSNAP	DATE:	OCTOBER 21, 1998
SCALE:	1" = 10' (APPROX.)	FILE NO.:	DWG\NETC\SSI\XSECT45B.DWG
		55 Jonspin Road Wilmington, MA 01887 (978)658-7899	

LEGEND

-  UNDERGROUND STORAGE TANK
- TF5-MW112  MONITORING WELL NUMBER AND LOCATION
- (B-51)  BORING NUMBER
-  APPROXIMATE GROUNDWATER FLOW DIRECTION
-  GROUNDWATER CONTOUR LINE
-  APPROXIMATE GROUNDWATER CONTOUR LINE
-  FENCE LINE



NOTES:

- 1) HORIZONTAL DATUM BASED ON STATE OF RHODE ISLAND GRID COORDINATE SYSTEM (NAD 1983).
- 2) WELL, BORING LOCATIONS FROM MAP BY LOUIS FEDERICI & ASSOCIATES, 235 PROMENADE STREET, PROVIDENCE, RI.
- 3) TANKS, ROADWAY, FENCING, CULVERT AND SHUNT & LOOP PIPING LOCATIONS FROM AVAILABLE PLANS AND ARE TO BE CONSIDERED APPROXIMATE.
- 4) MONITORING WELL, BORING LOCATIONS FROM ACTUAL FIELD SURVEY.
- 5) GROUNDWATER CONTOUR LINES BASED ON A NOVEMBER 1994 MONITORING EVENT.
- 6) PLAN NOT TO BE USED FOR DESIGN.

WATER TABLE MAP - NOVEMBER 1994 - TANK FARM 5	
NETC-NEWPORT, RI	
CORRECTIVE ACTION PLAN - TANKS FARM 5	
DRAWN BY: R.G. DEWSNAP	REV: 0
CHECKED BY: D. MACDOUGALL	DATE: 04 AUG 98
SCALE: 1" = 200'	FILE NO.: D:\DWG\NETC\CAP\H2OTAB_A.DWG

FIGURE A-5

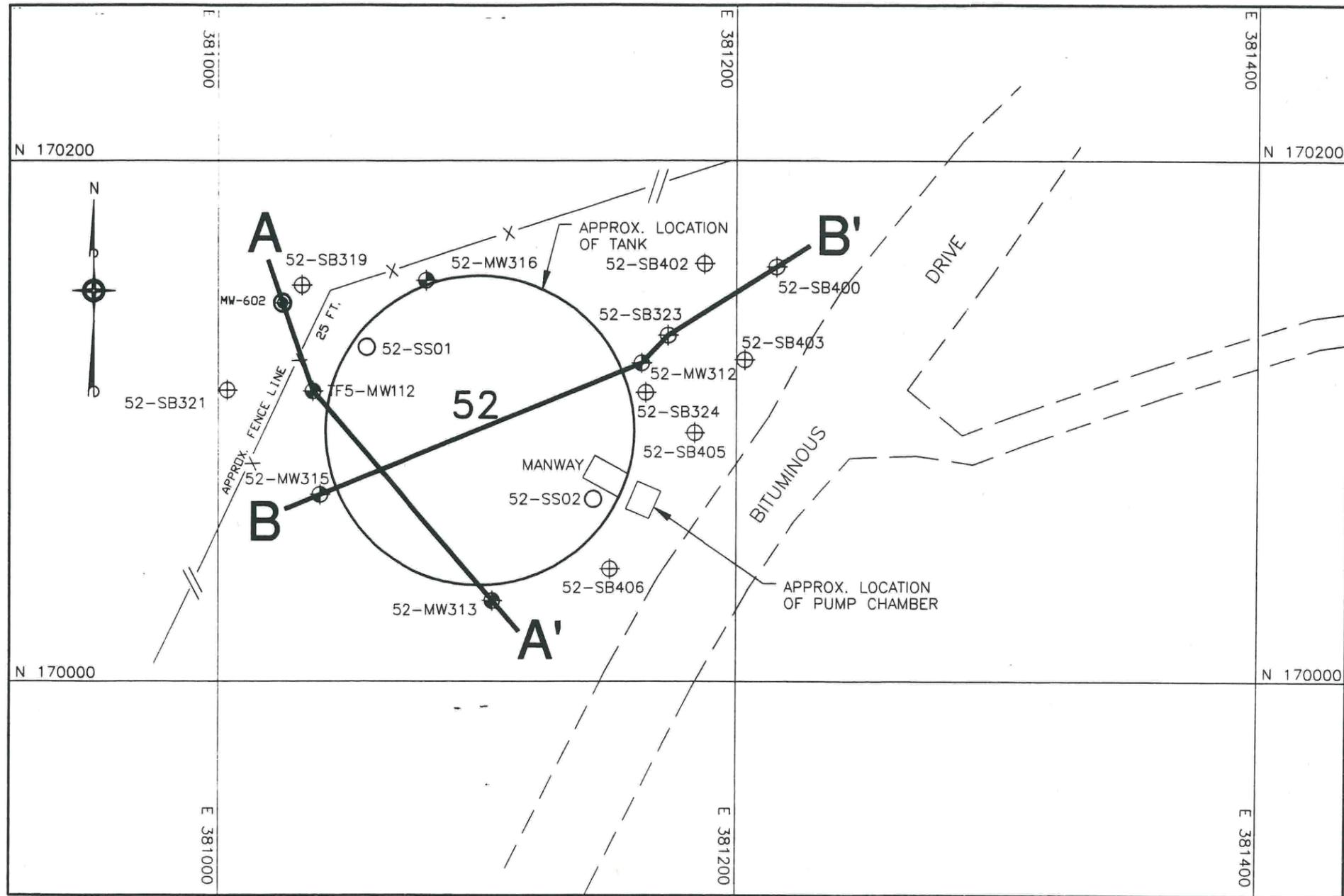
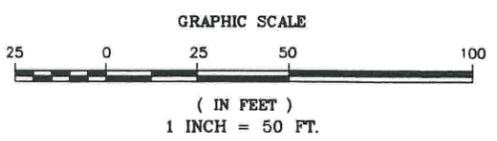


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LEGEND

- 52-SB319  SOIL BORING LOCATION WITH IDENTIFIER
- 52-SS01  SURFACE SOIL SAMPLE LOCATION WITH IDENTIFIER
- TF5-MW112  MONITORING WELL LOCATION WITH IDENTIFIER
- MW-602  LOCATION OF CORRECTIVE ACTION OVERBURDEN MONITORING WELL



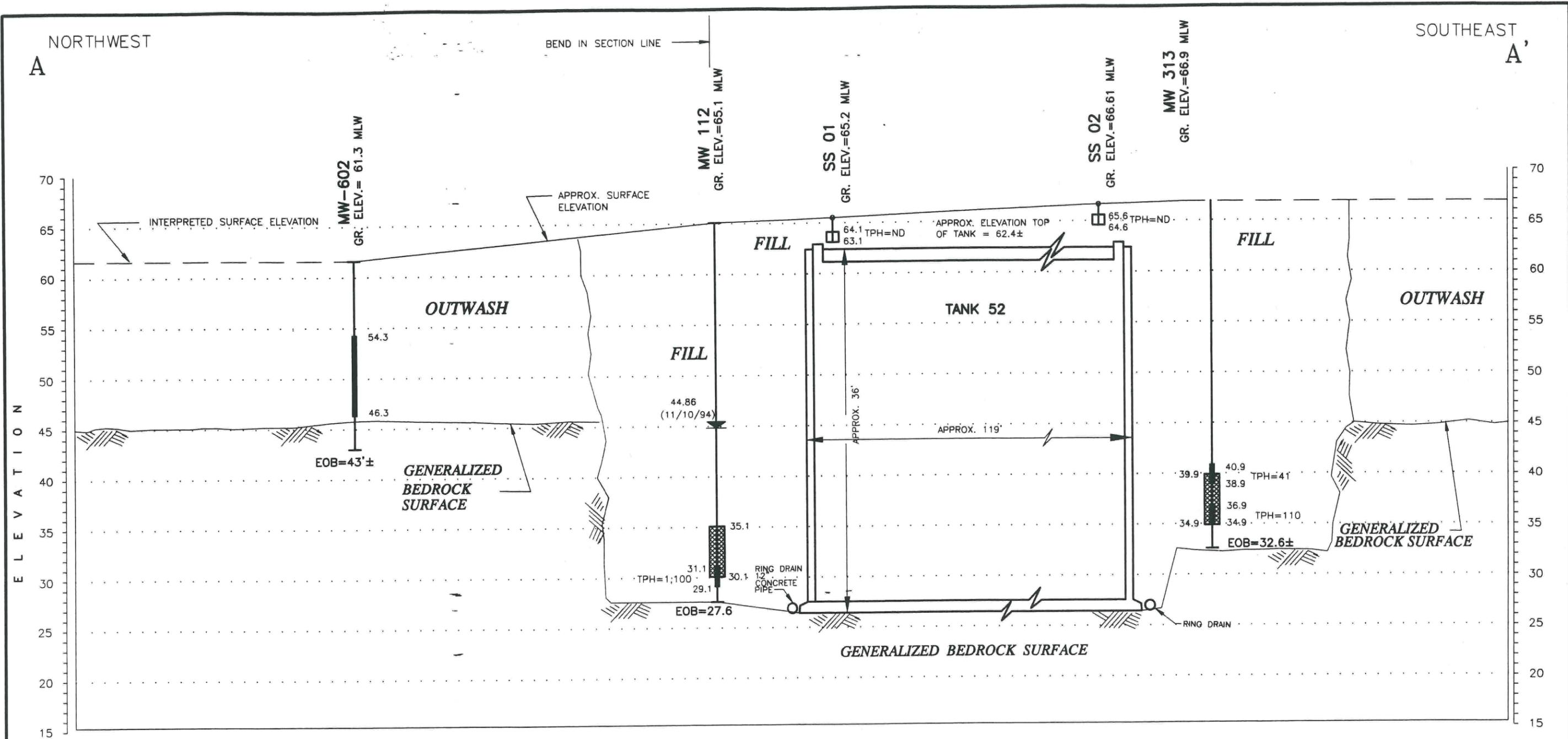
TANK 52 - TANK FARM 5

- NOTES:**
- 1) PLAN NOT TO BE USED FOR DESIGN.
 - 2) LOCATIONS FROM BASE MAP BY LOUIS FEDERICI & ASSOCIATES, 235 PROMENADE STREET, PROVIDENCE, RI.
 - 3) GRID COORDINATES BASED ON THE STATE OF RHODE ISLAND GRID COORDINATE SYSTEM (NAD 1983).

SAMPLE LOCATIONS AND CROSS-SECTION		FIGURE A-6
LOCUS PLAN - TANK 52 , NETC-NEWPORT, RI		
CORRECTIVE ACTION PLAN - TANKS 51, 52, 54 & 57 - TANK FARM 5		
DRAWN BY:	D.W. MACDOUGALL	REV.: 0
CHECKED BY:	R. CLEAVER	DATE: 03 AUG 98
SCALE:	1" = 50'	FILE NO.: DWG\NETC\SI-51-57\CAP\FIG_X-48



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LEGEND

49.3 WATER TABLE ELEVATION IN FEET (MLW)

41.1 SOIL SAMPLE INTERVAL ANALYZED BY LAB WITH ELEVATION AND TPH CONCENTRATION.

39.1

TPH TOTAL PETROLEUM HYDROCARBON (MG/KG)

MW 103 GROUNDWATER MONITORING WELL NUMBER

B205 SOIL BORING NUMBER

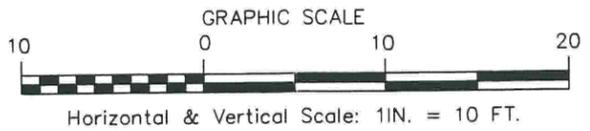
ND NOT DETECTED

EOB END OF BORING

GR. ELEV. GROUND ELEVATION

SS-01 SURFACE SOIL SAMPLE NUMBER

WELL SCREEN INTERVAL



- NOTE:**
- NOV. 1994, WATER LEVEL MEASUREMENTS REPORTED ON FIGURE; WATER LEVELS IN OCTOBER, 1995, WERE INFLUENCED BY PUMPING ACTIVITIES.
 - ALL TPH UNITS IN MILLIGRAMS PER KILOGRAM (MG/KG).
 - ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.
 - PLAN NOT TO BE USED FOR DESIGN.

CROSS-SECTION A-A' - TANK 52		FIGURE A-7	
NETC-NEWPORT, RI			
CORRECTIVE ACTION PLAN - TANKS 51, 52, 54 & 57 - TANK FARM 5			
DRAWN BY:	D.W. MACDOUGALL	REV.:	0
CHECKED BY:	R. CLEAVER	DATE:	03 AUG 98
SCALE:	1" = 10' (APPROX.)	FILE NO.:	DWG\NETC\SI-51-57\CAP\FIG_X-5B

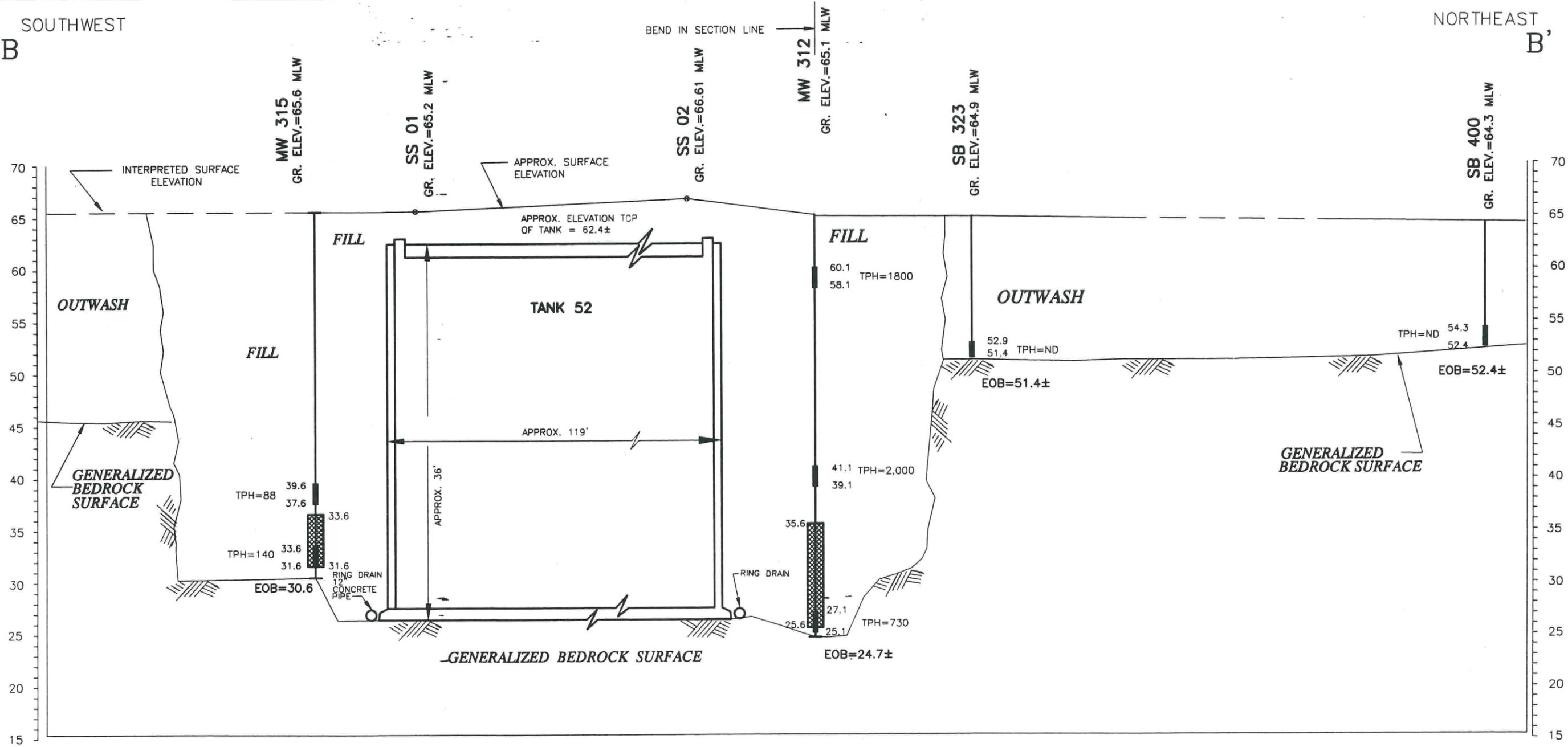


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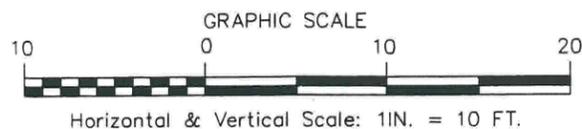
SOUTHWEST
B

NORTHEAST
B'



LEGEND

- 49.3 WATER TABLE ELEVATION IN FEET (MLW)
- 41.1 SOIL SAMPLE INTERVAL ANALYZED BY LAB WITH ELEVATION AND TPH CONCENTRATION.
- TPH=1,600 39.1
- TPH TOTAL PETROLEUM HYDROCARBON (MG/KG)
- MW 103 GROUNDWATER MONITORING WELL NUMBER
- B205 SOIL BORING NUMBER
- ND NOT DETECTED
- EOB END OF BORING
- GR. ELEV. GROUND ELEVATION
- SS-01 SURFACE SOIL SAMPLE NUMBER



N O T E:

- 1) NOV. 1994, WATER LEVEL MEASUREMENTS REPORTED ON FIGURE; WATER LEVELS IN OCTOBER, 1995, WERE INFLUENCED BY PUMPING ACTIVITIES.
- 2) ALL TPH UNITS IN MILLIGRAMS PER KILOGRAM (MG/KG).
- 3) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.
- 4) PLAN NOT TO BE USED FOR DESIGN.

CROSS-SECTION B-B' - TANK 52

NETC-NEWPORT, RI

CORRECTIVE ACTION PLAN - TANKS 51, 52, 54, & 57 - TANK FARM 5

DRAWN BY:	D. W. MACDOUGALL	REV.:	0
CHECKED BY:	R. CLEAVER	DATE:	03 AUG 98
SCALE:	1" = 10' (APPROX.)	FILE NO.:	DWG\NETC\SI-51-57\CAP\FIG_X-6B

FIGURE A-8



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A2 - HISTORICAL CHEMICAL DATA

Table number	Title
5-1	Tank Farm 4 UST Testpitting Petroflag Summary Results
5-2	Tank Farm 5 UST Testpitting Petroflag Summary Results
5-3	Tank Farm 4 UST Testpitting TPH Analytical Data
5-4	Tank Farm 4 UST Testpitting VOC Analytical Data
5-5	Tank Farm 4 UST Testpitting SVOC Analytical Data
5-6	Tank Farm 5 UST Testpitting TPH Analytical Data
5-7	Tank Farm 5 UST Testpitting VOC Analytical Data
5-8	Tank Farm 5 UST Testpitting SVOC Analytical Data
6-1	Tank Farm 4 Main Fuel Transect Petroflag Summary Results
6-2	Tank Farm 5 Main Fuel Transect Line Petroflag Summary Results
6-3	Tank Farm 4 Loop Piping Petroflag Summary Results
6-4	Tank Farm 5 Loop Piping Petroflag Summary Results
6-5	Tank Farm 4 Loop Piping TPH Analytical Data
6-6	Tank Farm 5 Loop Piping TPH Analytical Data
6-7	Tank Farm 4 Loop Piping Removal Action Petroflag Summary Results
6-8	Tank Farm 4 Loop Piping Removal Action Confirmatory Sample TPH Analytical Data
6-9	Tank Farm 4 Loop Piping Removal Action Confirmatory Sample VOC Analytical Data
6-10	Tank Farm 4 Loop Piping Removal Action Confirmatory Sample SVOC Analytical Data
6-11	Tank Farm 5 Oil/Water Separator BSW Piping VOC Analytical Data
6-12	Tank Farm 5 Oil/Water Separator BSW Piping Metals Analytical Data
6-13	Tank Farm 5 Oil/Water Separator BSW Piping PCB Analytical Data
6-14	Tank Farm 5 Oil/Water Separator BSW Piping Wet Chemistry Analytical Data
6-15	Tank Farm 4 Shunt Piping Petroflag Summary Results
6-16	Tank Farm 5 Shunt Piping Petroflag Summary Results
6-17	Tank Farm 4 Shunt Piping TPH Analytical Data
6-18	Tank Farm 4 Shunt Piping VOC Analytical Data
6-19	Tank Farm 4 Shunt Piping SVOC Analytical Data
6-20	Tank Farm 5 Shunt Piping TPH Analytical Data
6-21	Tank Farm 5 Shunt Piping VOC Analytical Data
6-22	Tank Farm 5 Shunt Piping SVOC Analytical Data
6-23	Tank Farm 4 UST 39 Pump Chamber Removal Action Petroflag Summary Results
6-24	Tank Farm 4 UST 39 Pump Chamber Removal Action Confirmatory Sample TPH Analytical Data
6-25	Tank Farm 4 UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data
6-26	Tank Farm 4 UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data
6-27	Tank Farm 5 Exit Piping Petroflag Summary Results
6-28	Tank Farm 5 CT-53 Chamber Removal Action Confirmatory Sample TPH Analytical Data
6-29	Tank Farm 5 CT-53 Chamber Removal Action Confirmatory Sample VOC Analytical Data
6-30	Tank Farm 5 CT-53 Chamber Removal Action Confirmatory Sample SVOC Analytical Data
6-31	Tank Farm 5 CT-53 Chamber Removal Action Confirmatory Sample Metals Analytical Data
6-32	Tank Farm 5 CT-53 Chamber Removal Action Confirmatory Sample PCB Analytical Data
6-33	Tank Farm 5 CT-56 Chamber Removal Action Confirmatory Sample TPH Analytical Data
6-34	Tank Farm 5 CT-56 Chamber Removal Action Confirmatory Sample VOC Analytical Data
6-35	Tank Farm 5 CT-56 Chamber Removal Action Confirmatory Sample SVOC Analytical Data
6-36	Tank Farm 5 CT-56 Chamber Removal Action Confirmatory Sample Metals Analytical Data
6-37	Tank Farm 5 CT-56 Chamber Removal Action Confirmatory Sample PCB Analytical Data
6-38	Tank Farm 5 A-18 Chamber Removal Action Confirmatory Sample TPH Analytical Data
7-1	Tank Farm 4 Transformer Vaults PCB Analytical Data
7-2	Tank Farm 4 Transformer Vaults Chlorinated Benzene Analytical Data
7-3	Tank Farm 5 Transformer Vaults PCB Analytical Data
7-4	Tank Farm 5 Transformer Vaults Chlorinated Benzene Analytical Data
7-5	Tank Farm 4 Substation Lead Analytical Data
7-6	Tank Farm 4 Substation PCB Analytical Data
7-7	Tank Farm 4 Substation Chlorinated Benzene Analytical Data
7-8	Tank Farm 5 Substation Lead Analytical Data
7-9	Tank Farm 5 Substation PCB Analytical Data
7-10	Tank Farm 5 Substation Chlorinated Benzene Analytical Data
7-11	Tank Farm 4 Ruin 1 Demolition TPH Analytical Data
7-12	Tank Farm 4 Ruin 1 Demolition SVOC Analytical Data
7-13	Tank Farm 4 Ruin 1 Demolition Dioxin/Furans Analytical Data

Table number	Title
7-14	Tank Farm 4 Ruin 1 Excavated Backfill TPH Analytical Data
7-15	Tank Farm 4 Ruin 1 Excavated Backfill SVOC Analytical Data
7-16	Tank Farm 4 Ruin 1 Excavated Backfill Dioxin/Furans Analytical Data
7-17	Tank Farm 4 Ruin 2 Demolition TPH Analytical Data
7-18	Tank Farm 4 Ruin 2 Demolition SVOC Analytical Data
7-19	Tank Farm 5 Oil/Water Separator Demolition Petroflag Summary Results
7-20	Tank Farm 5 Oil/Water Separator Demolition VOC Analytical Data
7-21	Tank Farm 5 Oil/Water Separator Demolition SVOC Analytical Data
7-22	Tank Farm 5 Oil/Water Separator Demolition Metals Analytical Data
7-23	Tank Farm 5 Oil/Water Separator Demolition PCB Analytical Data
7-24	Tank Farm 5 Oil/Water Separator Demolition Dioxin/Furans Analytical Data
7-25	Tank Farm 4 Ruin 1 Straight Line Discharge Pipe Sediment TPH Analytical Data
7-26	Tank Farm 4 Ruin 1 Straight Line Discharge Pipe Sediment VOC Analytical Data
7-27	Tank Farm 4 Ruin 1 Straight Line Discharge Pipe Sediment SVOC Analytical Data
7-28	Tank Farm 4 Ruin 1 Straight Line Discharge Pipe Sediment Dioxin/Furans Analytical Data
7-29	Tank Farm 5 Oil/Water Separator Discharge Petroflag Summary Results
7-30	Tank Farm 5 Oil/Water Separator Discharge TPH Analytical Results
7-31	Tank Farm 5 Oil/Water Separator Discharge VOC Analytical Results
7-32	Tank Farm 5 Oil/Water Separator Discharge SVOC Analytical Results
7-33	Tank Farm 5 Oil/Water Separator Discharge Metals Analytical Results
7-34	Tank Farm 5 Oil/Water Separator Discharge PCB Analytical Results
7-35	Tank Farm 5 Oil/Water Separator Discharge Dioxin/Furans Analytical Results
7-36	Tank Farm 4 Ruin 1 Straight Discharge Line Outfall Exploratory Petroflag Summary Results
7-37	Tank Farm 4 Ruin 1 Straight Discharge Line Outfall Exploratory TPH Analytical Data
7-38	Tank Farm 4 Ruin 1 Straight Discharge Line Outfall Exploratory SVOC Analytical Data
7-39	Tank Farm 4 Ruin 1 Straight Discharge Line Outfall Exploratory Dioxin/Furans Analytical Data
7-40	Tank Farm 4 Ruin 1 Straight Discharge Line Outfall Confirmatory TPH Analytical Data
7-41	Tank Farm 4 Ruin 1 Straight Discharge Line Outfall Confirmatory SVOC Analytical Data
7-42	Tank Farm 4 Ruin 1 Straight Discharge Line Outfall Confirmatory Dioxin/Furans Analytical Data
7-43	Tank Farm 4 Ruin 1 Straight Discharge Line Outfall Re-excavation Confirmatory TPH Analytical Data
7-44	Tank Farm 4 Ruin 1 Straight Discharge Line Outfall Re-excavation Confirmatory SVOC Analytical Data
7-45	Tank Farm 4 Ruin 1 Diagonal Line Discharge TPH Analytical Data
7-46	Tank Farm 4 Ruin 2 Outfall TPH Analytical Data
7-47	Tank Farm 4 Ruin 2 Outfall SVOC Analytical Data
7-48	Tank Farm 4 Ruin 2 Drainage Swale TPH Analytical Data
7-49	Tank Farm 4 Buoy Sheds Lead Analytical Data
7-50	Tank Farm 4 MW-10 TPH Analytical Data
7-51	Tank Farm 4 MW-10 Lead Analytical Data
7-52	Tank Farm 5 Corrugated Shed and Non-Vegetative Area Petroflag Summary Results
7-53	Tank Farm 5 Corrugated Shed and Non-Vegetative Area TPH Analytical Data
7-54	Tank Farm 5 Corrugated Shed and Non-Vegetative Area VOC Analytical Data
7-55	Tank Farm 5 Corrugated Shed and Non-Vegetative Area SVOC Analytical Data
7-56	Tank Farm 5 Corrugated Shed and Non-Vegetative Area Metals Analytical Data
7-57	Tank Farm 5 Corrugated Shed and Non-Vegetative Area PCB Analytical Data
7-58	Tank Farm 5 Corrugated Shed and Non-Vegetative Area Pesticide Analytical Data
7-59	Tank Farm 4 Fenceline Survey TPH Analytical Data
7-60	Tank Farm 4 Fenceline Survey SVOC Analytical Data
7-61	Tank Farm 4 Fenceline Survey Lead Analytical Data
7-62	Tank Farm 4 Fenceline Survey PCB Analytical Data
7-63	Tank Farm 5 Fenceline Survey TPH Analytical Data
7-64	Tank Farm 5 Fenceline Survey SVOC Analytical Data
7-65	Tank Farm 5 Fenceline Survey Lead Analytical Data
7-66	Tank Farm 5 Fenceline Survey PCB Analytical Data

**TABLE 5-1
Tank Farm 4 UST Testpitting
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-40-TP1-B1	Moist	10/27/04	1	75
P-40-TP1-B2	Moist	10/27/04	1	40
P-40-TP1-B2	Saturated	10/27/04	1	30
P-40-TP1-SW1	Dry	10/27/04	1	233
P-40-TP1-SW2	Dry	10/27/04	1	102
P-40-TP2-B1	Sl. Moist	10/27/04	1	27
P-40-TP2-B2	Sl. Moist	10/27/04	1	39
P-40-TP2-SW1	Sl. Moist	10/27/04	1	25
P-40-TP2-SW1	Moist	10/27/04	1	41
P-40-TP2-SW2	Sl. Moist	10/27/04	1	44
P-40-TP3-B1	Dry	10/21/04	1	34
P-40-TP3-B2	Moist	10/21/04	1	30
P-40-TP3-SW1	Dry	10/21/04	1	22
P-40-TP3-SW1	Dry	10/21/04	1	22
P-40-TP3-SW2	Dry	10/21/04	1	20
P-40-TP4-B1	Dry	10/22/04	1	22
P-40-TP4-B2	Dry	10/22/04	1	22
P-40-TP4-B2	Dry	10/22/04	1	28
P-40-TP4-SW1	Dry	10/22/04	1	23
P-40-TP4-SW2	Dry	10/22/04	1	21
P-40-TPA-B1	Dry	10/22/04	1	42
P-40-TPA-B2	Dry	10/22/04	1	89
P-40-TPA-B3	Dry	10/22/04	1	32
P-40-TPA-B4	Dry	10/22/04	1	27
P-40-TPA-SW1	Dry	10/22/04	1	16
P-40-TPA-SW2	Dry	10/22/04	1	20
P-40-TPB-B1	Sl. Moist	10/22/04	1	23
P-40-TPB-B2	Dry	10/22/04	1	27
P-40-TPB-B3	Dry	10/22/04	1	27
P-40-TPB-B4	Dry	10/22/04	1	28
P-40-TPB-SW1	Dry	10/22/04	1	26
P-40-TPB-SW2	Dry	10/22/04	1	37
P-40-TPC-B1	Moist	10/22/04	1	20
P-40-TPC-B2	Dry	10/22/04	1	32
P-40-TPC-B3	Moist	10/22/04	1	37
P-40-TPC-B4	Dry	10/22/04	1	26
P-40-TPC-SW1	Dry	10/22/04	1	28
P-40-TPC-SW2	Moist	10/22/04	1	33
P-40-TPC-SW3	Dry	10/22/04	1	30
P-40-TPD-B1	Sl. Moist	10/22/04	1	14
P-40-TPD-B2	Dry	10/22/04	1	18
P-40-TPD-B3	Dry	10/22/04	1	184
P-40-TPD-B4	Dry	10/22/04	1	18
P-40-TPD-SW1	Dry	10/22/04	1	22
P-40-TPD-SW2	Moist	10/22/04	1	14
P-42-TP1-B1	Dry	10/22/04	1	82
P-42-TP1-B1	Dry	10/22/04	1	90
P-42-TP1-B1	Moist	10/22/04	1	37

**TABLE 5-1
Tank Farm 4 UST Testpitting
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-42-TP1-B2	Sl. Moist	10/22/04	1	84
P-42-TP1-SW1	Dry	10/22/04	1	61
P-42-TP1-SW2	Dry	10/22/04	1	36
P-42-TP2-B1	Dry	10/22/04	1	54
P-42-TP2-B2	Dry	10/22/04	1	8
P-42-TP2-SW1	Dry	10/22/04	1	26
P-42-TP2-SW1	Dry	10/22/04	1	18
P-42-TP2-SW1	Moist	10/22/04	1	12
P-42-TP2-SW2	Dry	10/22/04	1	16
P-42-TP3-B1	Dry	10/22/04	1	20
P-42-TP3-B2	Dry	10/22/04	1	26
P-42-TP3-SW1	Dry	10/22/04	1	263
P-42-TP3-SW1	Dry	10/22/04	1	28
P-42-TP3-SW2	Dry	10/22/04	1	44
P-42-TP4-B1	Dry	10/25/04	1	28
P-42-TP4-B2	Dry	10/25/04	1	23
P-42-TP4-SW1	Dry	10/25/04	1	25
P-42-TP4-SW1	Dry	10/25/04	1	27
P-42-TP4-SW1	Dry	10/25/04	1	20
P-42-TP4-SW2	Dry	10/25/04	1	23
P-42-TPA-B1	Dry	10/25/04	1	27
P-42-TPA-B2	Dry	10/25/04	1	22
P-42-TPA-B3	Dry	10/25/04	1	27
P-42-TPA-B4	Dry	10/25/04	1	32
P-42-TPA-SW1	Dry	10/25/04	1	27
P-42-TPA-SW2	Dry	10/25/04	1	22
P-42-TPB-B1	Dry	10/25/04	1	9
P-42-TPB-B2	Dry	10/25/04	1	14
P-42-TPB-B3	Dry	10/25/04	1	25
P-42-TPB-B4	Dry	10/25/04	1	9
P-42-TPB-SW1	Dry	10/25/04	1	19
P-42-TPB-SW2	Sl. Moist	10/25/04	1	92
P-42-TPC-B1	Sl. Moist	10/25/04	1	9
P-42-TPC-B2	Dry	10/25/04	1	9
P-42-TPC-B3	Dry	10/25/04	1	16
P-42-TPC-B4	Dry	10/25/04	1	25
P-42-TPC-SW1	Dry	10/25/04	1	29
P-42-TPC-SW2	Dry	10/25/04	1	16
P-42-TPD-B1	Sl. Moist	10/25/04	1	21
P-42-TPD-B2	Dry	10/25/04	1	25
P-42-TPD-B3	Dry	10/25/04	1	26
P-42-TPD-B4	Dry	10/25/04	1	20
P-42-TPD-SW1	Dry	10/25/04	1	14
P-42-TPD-SW2	Dry	10/25/04	1	22
P-44-TP1-B1	Dry	11/3/04	1	168
P-44-TP1-B1	Dry	11/3/04	1.2	136
P-44-TP1-B1	Slightly Moist	10/29/04	1	83
P-44-TP1-B2	Dry	10/29/04	1	28

**TABLE 5-1
Tank Farm 4 UST Testpitting
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-44-TP1-SW1	Dry	10/29/04	1	21
P-44-TP1-SW2	Dry	10/29/04	1	50
P-44-TP1-SW2	Dry	10/29/04	1.1	102
P-44-TP1-SW2	Dry	10/29/04	1	249
P-44-TP2-B1	Dry	10/29/04	1	35
P-44-TP2-B2	Dry	10/29/04	1	20
P-44-TP2-SW1	Dry	10/29/04	1	22
P-44-TP2-SW2	Moist	10/29/04	1	19
P-44-TP3-B1	Dry	10/29/04	1	50
P-44-TP3-B2	Dry	10/29/04	1	28
P-44-TP3-SW1	Dry	10/29/04	1	30
P-44-TP3-SW2	Moist	10/29/04	1	11
P-44-TP3-SW2	Dry	10/29/04	1.3	12
P-44-TP3-SW2	Saturated	10/29/04	1	40
P-44-TP4-B1	Dry	10/29/04	1	35
P-44-TP4-B2	Dry	10/29/04	1	29
P-44-TP4-SW1	Dry	10/29/04	1	28
P-44-TP4-SW2	Dry	10/29/04	1	41
P-44-TPA-B1	Dry	10/29/04	1	26
P-44-TPA-B2	Dry	10/29/04	1	25
P-44-TPA-B3	Dry	10/29/04	1	19
P-44-TPA-B4	Dry	10/29/04	1	26
P-44-TPA-SW1	Slightly Moist	10/29/04	1	28
P-44-TPA-SW2	Dry	10/29/04	1	29
P-44-TPB-B1	Dry	10/29/04	1	51
P-44-TPB-B2	Dry	10/29/04	1	41
P-44-TPB-B3	Dry	10/29/04	1	22
P-44-TPB-B4	Dry	10/29/04	1	61
P-44-TPB-SW1	Dry	10/29/04	1	42
P-44-TPB-SW2	Dry	10/29/04	1	22
P-44-TPC-B1	Dry	10/29/04	1	35
P-44-TPC-B2	Slightly Moist	10/29/04	1	47
P-44-TPC-B3	Dry	10/29/04	1	33
P-44-TPC-B4	Dry	10/29/04	1	34
P-44-TPC-SW1	Slightly Moist	10/29/04	1	39
P-44-TPC-SW2	Dry	10/29/04	1	34
P-44-TPD-B1	Dry	10/29/04	1	40
P-44-TPD-B2	Dry	10/29/04	1	32
P-44-TPD-B3	Dry	10/29/04	1	28
P-44-TPD-B4	Slightly Moist	10/29/04	1	27
P-44-TPD-SW1	Dry	10/29/04	1	9
P-44-TPD-SW1	Dry	10/29/04	1.2	23
P-44-TPD-SW1	Moist	10/29/04	1	28
P-44-TPD-SW2	Dry	10/29/04	1	40
P-45-TP1-B1	Dry	10/29/04	1	30
P-45-TP1-B2	Dry	10/29/04	1	44
P-45-TP1-SW1	Dry	10/29/04	1	83
P-45-TP1-SW2	Dry	10/29/04	1	70

**TABLE 5-1
Tank Farm 4 UST Testpitting
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-45-TP1-SW2	Dry	10/29/04	1	70
P-45-TP1-SW2	Dry	10/29/04	1	25
P-45-TP2-B1	Dry	10/29/04	1	34
P-45-TP2-B2	Moist	10/29/04	1	26
P-45-TP2-SW1	Dry	10/29/04	1	28
P-45-TP2-SW1	Moist	10/29/04	1	29
P-45-TP2-SW2	Dry	10/29/04	1	37
P-45-TP3-B1	Dry	10/23/04	1	42
P-45-TP3-B2	Dry	10/23/04	1	58
P-45-TP3-B2	Moist	10/23/04	1	23
P-45-TP3-B2	Dry	10/23/04	1	23
P-45-TP3-SW1	Dry	10/23/04	1	19
P-45-TP3-SW2	Dry	10/23/04	1	15
P-45-TP4-B1	Dry	10/23/04	1	27
P-45-TP4-B2	Dry	10/23/04	1	36
P-45-TP4-SW1	Dry	10/23/04	1	23
P-45-TP4-SW2	Saturated	10/23/04	1	22
P-45-TP4-SW2	Dry	10/23/04	1	15
P-45-TP4-SW2	Dry	10/23/04	1	103
P-45-TPA-B1	Dry	10/23/04	1	27
P-45-TPA-B2	Dry	10/23/04	1	23
P-45-TPA-B3	Dry	10/23/04	1	28
P-45-TPA-B4	Dry	10/23/04	1	36
P-45-TPA-SW1	Dry	10/23/04	1	41
P-45-TPA-SW2	Dry	10/23/04	1	29
P-45-TPB-B1	Dry	10/23/04	1	33
P-45-TPB-B2	Dry	10/23/04	1	37
P-45-TPB-B3	Dry	10/23/04	1	28
P-45-TPB-B4	Dry	10/23/04	1	29
P-45-TPB-SW1	Dry	10/23/04	1	47
P-45-TPB-SW2	Dry	10/23/04	1	28
P-45-TPC-B1	Dry	10/23/04	1	27
P-45-TPC-B2	Dry	10/23/04	1	34
P-45-TPC-B3	Dry	10/23/04	1	33
P-45-TPC-B4	Dry	10/23/04	1	16
P-45-TPC-SW1	Dry	10/23/04	1	21
P-45-TPC-SW2	Dry	10/23/04	1	34
P-45-TPD-B1	Dry	10/23/04	1	29
P-45-TPD-B2	Dry	10/23/04	1	27
P-45-TPD-B3	Dry	10/23/04	1	33
P-45-TPD-B4	Dry	10/23/04	1	22
P-45-TPD-SW1	Dry	10/23/04	1	28
P-45-TPD-SW2	Dry	10/23/04	1	29
P-48-TP1-B1	Dry	10/23/04	1	43
P-48-TP1-B2	Dry	10/23/04	1	60
P-48-TP1-SW1	Dry	10/23/04	1	83
P-48-TP1-SW2	Dry	10/23/04	1	18
P-48-TP1-SW2	Dry	10/23/04	1	188

**TABLE 5-1
Tank Farm 4 UST Testpitting
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-48-TP2-B1	Dry	10/23/04	1	23
P-48-TP2-B2	Dry	10/23/04	1	16
P-48-TP2-B2	Dry	10/23/04	1	32
P-48-TP2-B2	Dry	10/23/04	1	28
P-48-TP2-SW1	Dry	10/23/04	1	23
P-48-TP2-SW2	Dry	10/23/04	1	13
P-48-TP3-B1	Dry	10/23/04	1	19
P-48-TP3-B2	Dry	10/23/04	1	19
P-48-TP3-SW1	Dry	10/23/04	1	14
P-48-TP3-SW1	Moist	10/23/04	1	23
P-48-TP3-SW2	Moist	10/23/04	1	28
P-48-TP4-B1	Dry	10/23/04	1	18
P-48-TP4-B2	Dry	10/23/04	1	71
P-48-TP4-SW1	Dry	10/23/04	1	12
P-48-TP4-SW2	Dry	10/23/04	1	22
P-48-TP4-SW2	Dry	10/23/04	1	13
P-48-TP4-SW2	Dry	10/23/04	1	46
P-48-TPA-B1	Dry	10/23/04	1	23
P-48-TPA-B2	Dry	10/23/04	1	18
P-48-TPA-B3	Dry	10/23/04	1	21
P-48-TPA-B4	Slightly Moist	10/23/04	1	23
P-48-TPA-SW1	Dry	10/28/04	1	27
P-48-TPA-SW2	Dry	10/28/04	1	19
P-48-TPB-B1	Dry	10/28/04	1	26
P-48-TPB-B2	Dry	10/28/04	1	23
P-48-TPB-B3	Dry	10/28/04	1	27
P-48-TPB-B4	Moist	10/28/04	1	23
P-48-TPB-SW1	Dry	10/28/04	1	18
P-48-TPB-SW2	Dry	10/28/04	1	20
P-48-TPC-B1	Dry	10/28/04	1	35
P-48-TPC-B2	Dry	10/28/04	1	30
P-48-TPC-B3	Dry	10/28/04	1	36
P-48-TPC-B4	Dry	10/28/04	1	23
P-48-TPC-SW1	Dry	10/28/04	1	23
P-48-TPC-SW2	Dry	10/28/04	1	21
P-48-TPD-B1	Dry	10/28/04	1	35
P-48-TPD-B2	Dry	10/28/04	1	28
P-48-TPD-B3	Dry	10/28/04	1	26
P-48-TPD-B4	Dry	10/28/04	1	27
P-48-TPD-SW1	Dry	10/28/04	1	25
P-48-TPD-SW2	Dry	10/28/04	1	22

**TABLE 5-2
Tank Farm 5 UST Testpitting
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-49-TP1-B1	Dry	10/22/04	1	134
P-49-TP1-B2	Moist	11/12/04	1	59
P-49-TP1-B2	Moist	11/12/04	1.2	53
P-49-TP1-B2	Dry	11/12/04	1	67
P-49-TP1-SW1	Dry	11/12/04	1	36
P-49-TP1-SW2	Dry	11/12/04	1	139
P-49-TP2-B1	Dry	10/22/04	1	42
P-49-TP2-B2	Dry	10/22/04	1	36
P-49-TP2-SW1	Dry	10/22/04	1	30
P-49-TP2-SW2	Dry	10/22/04	1	41
P-49-TP3-B1	Dry	10/22/04	1	35
P-49-TP3-B2	Dry	10/22/04	1	29
P-49-TP3-SW1	Dry	10/22/04	1	30
P-49-TP3-SW2	Dry	10/22/04	1	11
P-49-TP4-B1	Dry	10/22/04	1	33
P-49-TP4-B2	Moist	10/22/04	1	41
P-49-TP4-SW1	Dry	10/22/04	1	32
P-49-TP4-SW2	Dry	10/22/04	1	22
P-49-TPA-B1	Dry	10/22/04	1	41
P-49-TPA-B2	Dry	10/22/04	1	26
P-49-TPA-B3	Dry	10/22/04	1	36
P-49-TPA-B4	Dry	10/22/04	1	29
P-49-TPA-SW1	Dry	10/22/04	1	22
P-49-TPA-SW2	Dry	10/22/04	1	35
P-49-TPB-B1	Dry	10/22/04	1	29
P-49-TPB-B2	Moist	10/22/04	1	28
P-49-TPB-B3	Dry	10/22/04	1	30
P-49-TPB-B4	Dry	10/22/04	1	27
P-49-TPB-SW1	Dry	10/22/04	1	32
P-49-TPB-SW2	Dry	10/22/04	1	27
P-49-TPC-B1	Dry	10/22/04	1	36
P-49-TPC-B2	Dry	10/22/04	1	27
P-49-TPC-B3	Dry	10/22/04	1	22
P-49-TPC-B4	Dry	10/22/04	1	5
P-49-TPC-SW1	Dry	10/22/04	1	37
P-49-TPC-SW2	Dry	10/22/04	1	25
P-49-TPD-B1	Dry	10/22/04	1	43
P-49-TPD-B2	Dry	10/22/04	1	37
P-49-TPD-B3	Dry	10/22/04	1	37
P-49-TPD-B4	Dry	10/22/04	1	21
P-49-TPD-SW1	Dry	10/22/04	1	29
P-49-TPD-SW2	Dry	10/22/04	1	50
P-50-TP1-B1	Dry	10/22/04	1	253
P-50-TP1-B2	Dry	10/22/04	1	252
P-50-TP1-SW1	Dry	10/22/04	1	155
P-50-TP1-SW2	Dry	10/22/04	1	82
P-50-TP1-SW2	Dry	10/22/04	1	62
P-50-TP1-SW2	Moist	10/22/04	1.1	220

**TABLE 5-2
Tank Farm 5 UST Testpitting
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-50-TP2-B1	Dry	10/22/04	1	48
P-50-TP2-B2	Dry	10/22/04	1	43
P-50-TP2-SW1	Dry	10/22/04	1	562
P-50-TP2-SW2	Dry	10/22/04	1	183
P-50-TP3-B1	Dry	11/8/04	1	51
P-50-TP3-B1	Dry	11/8/04	1	10
P-50-TP3-B1	Dry	11/8/04	1.1	31
P-50-TP3-B2	Moist	11/8/04	1	72
P-50-TP3-B2	Dry	11/8/04	1	1293
P-50-TP3-B2	Dry	11/8/04	1.3	EEEE
P-50-TP3-SW1	Dry	11/8/04	1	30
P-50-TP3-SW2	Dry	11/8/04	1	28
P-50-TP4-B1	Moist	11/8/04	1	1869
P-50-TP4-B2	Saturated	11/8/04	1	EEEE
P-50-TP4-SW1	Dry	11/8/04	1	20
P-50-TP4-SW2	Dry	11/8/04	1	EEEE
P-50-TPA-B1	Moist	11/5/04	1	565
P-50-TPA-B2	Moist	11/5/04	1	6
P-50-TPA-B3	Dry	11/5/04	1	EEEE
P-50-TPA-B4	Moist	11/5/04	1	258
P-50-TPA-SW1	Dry	11/5/04	1	20
P-50-TPA-SW2	Dry	11/5/04	1	18
P-50-TPB-B1	Dry	11/5/04	1	29
P-50-TPB-B2	Dry	11/5/04	1	18
P-50-TPB-B3	Dry	11/5/04	1	36
P-50-TPB-B4	Dry	11/5/04	1	103
P-50-TPB-SW1	Dry	11/5/04	1	1477
P-50-TPB-SW2	Dry	11/5/04	1	343
P-50-TPC-B1	Slightly Moist	11/5/04	1	25
P-50-TPC-B2	Slightly Moist	11/5/04	1	11
P-50-TPC-B3	Slightly Moist	11/5/04	1	25
P-50-TPC-B4	Dry	11/5/04	1	26
P-50-TPC-SW1	Dry	11/5/04	1	26
P-50-TPC-SW2	Dry	11/5/04	1	22
P-50-TPD-B1	Moist	11/5/04	1	40
P-50-TPD-B2	Moist	11/5/04	1	1248
P-50-TPD-B3	Dry	11/5/04	1	EEEE
P-50-TPD-B4	Dry	11/5/04	1	EEEE
P-50-TPD-SW1	Dry	11/5/04	1	25
P-50-TPD-SW2	Moist	11/5/04	1	44
P-51-TP2-B1	Dry	11/5/04	1	36
P-51-TP2-B2	Dry	11/5/04	1	40
P-51-TP2-SW1	Dry	11/5/04	1	32
P-51-TP2-SW2	Dry	11/5/04	1	27
P-51-TP3-B1	Dry	11/5/04	1	35
P-51-TP3-B2	Dry	11/5/04	1	34
P-51-TP3-SW1	Dry	11/5/04	1	37
P-51-TP3-SW2	Dry	11/5/04	1	48

TABLE 5-2
Tank Farm 5 UST Testpitting
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-51-TP4-B1	Dry	11/3/04	1	34
P-51-TP4-B2	Dry	11/3/04	1	40
P-51-TP4-SW1	Dry	11/3/04	1	40
P-51-TP4-SW2	Dry	11/3/04	1	34
P-51-TPB-B1	Dry	11/3/04	1	459
P-51-TPB-B2	Dry	11/3/04	1	34
P-51-TPB-B3	Dry	11/3/04	1	30
P-51-TPB-B4	Slightly Moist	11/3/04	1	26
P-51-TPB-SW1	Dry	11/3/04	1	26
P-51-TPB-SW2	Dry	11/3/04	1	29
P-51-TPC-B1	Dry	11/3/04	1	46
P-51-TPC-B2	Dry	11/3/04	1	37
P-51-TPC-B3	Dry	11/3/04	1	48
P-51-TPC-B4	Dry	11/3/04	1	39
P-51-TPC-SW1	Dry	11/3/04	1	33
P-51-TPC-SW2	Dry	11/3/04	1	41
P-51-TPD-B1	Dry	11/3/04	1	39
P-51-TPD-B2	Dry	11/3/04	1	30
P-51-TPD-B3	Dry	11/3/04	1	35
P-51-TPD-B4	Dry	11/3/04	1	32
P-51-TPD-SW1	Dry	11/3/04	1	33
P-51-TPD-SW2	Dry	11/3/04	1	33
P-54-TP1-B1	Dry	11/3/04	1	11
P-54-TP1-B2	Dry	11/3/04	1	46
P-54-TP1-SW1	Dry	11/3/04	1	29
P-54-TP1-SW2	Dry	11/3/04	1	41
P-54-TP2-B1	Dry	11/3/04	1	7
P-54-TP2-B2	Dry	11/3/04	1	4
P-54-TP2-SW1	Dry	11/3/04	1	0
P-54-TP2-SW2	Dry	11/3/04	1	9
P-54-TP3-B1	Saturated	11/3/04	1	18
P-54-TP3-B2	Dry	11/3/04	1	0
P-54-TP3-SW1	Dry	11/3/04	1	20
P-54-TP3-SW2	Dry	11/3/04	1	43
P-54-TP4-B1	Moist	11/3/04	1	0
P-54-TP4-B2	Saturated	11/3/04	1	0
P-54-TP4-SW1	Moist	11/3/04	1	0
P-54-TP4-SW2	Dry	11/3/04	1	18
P-54-TPA-B1	Dry	11/3/04	1	28
P-54-TPA-B2	Dry	11/3/04	1	29
P-54-TPA-B3	Dry	11/3/04	1	34
P-54-TPA-B4	Dry	11/3/04	1	33
P-54-TPA-SW1	Dry	11/3/04	1	57
P-54-TPA-SW1	Dry	11/3/04	1	1
P-54-TPA-SW1	Dry	11/3/04	1.1	6
P-54-TPA-SW2	Dry	11/3/04	1	22
P-54-TPB-B1	Dry	10/30/04	1	11
P-54-TPB-B2	Dry	10/30/04	1	20

TABLE 5-2
Tank Farm 5 UST Testpitting
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-54-TPB-B3	Dry	10/30/04	1	12
P-54-TPB-B4	Dry	10/30/04	1	19
P-54-TPB-SW1	Dry	10/30/04	1	6
P-54-TPB-SW2	Dry	10/30/04	1	5
P-54-TPC-B1	Moist	10/30/04	1	13
P-54-TPC-B2	Moist	10/30/04	1	63
P-54-TPC-B2	Dry	10/30/04	1	9
P-54-TPC-B2	Dry	10/30/04	1.2	12
P-54-TPC-B3	Dry	10/30/04	1	18
P-54-TPC-B4	Dry	10/30/04	1	21
P-54-TPC-SW1	Dry	10/30/04	1	0
P-54-TPC-SW2	Dry	10/30/04	1	55
P-54-TPC-SW2	Dry	10/30/04	1	12
P-54-TPC-SW2	Dry	10/30/04	1.2	23
P-54-TPD-B1	Dry	10/30/04	1	0
P-54-TPD-B2	Dry	10/30/04	1	22
P-54-TPD-B3	Dry	10/30/04	1	0
P-54-TPD-B4	Saturated	10/30/04	1	0
P-54-TPD-SW1	Dry	10/30/04	1	18
P-54-TPD-SW2	Dry	10/30/04	1	16
P-58-TP1-B1	Dry	10/30/04	1	84
P-58-TP1-B1	Dry	10/30/04	1	25
P-58-TP1-B1	Dry	10/30/04	1.3	216
P-58-TP1-B2	Dry	10/30/04	1	20
P-58-TP1-SW1	Dry	10/30/04	1	8
P-58-TP1-SW2	Dry	10/30/04	1	130
P-58-TP2-B1	Dry	10/30/04	1	0
P-58-TP2-B1	Dry	10/30/04	1.3	25
P-58-TP2-B1	Dry	10/30/04	1	62
P-58-TP2-B2	Dry	10/30/04	1	0
P-58-TP2-B2	Dry	10/30/04	1.2	0
P-58-TP2-B2	Dry	10/30/04	1	56
P-58-TP2-SW1	Dry	10/30/04	1	32
P-58-TP2-SW2	Dry	10/30/04	1	29
P-58-TP3-B1	Dry	10/30/04	1	190
P-58-TP3-B2	Dry	10/30/04	1	19
P-58-TP3-SW1	Dry	10/30/04	1	36
P-58-TP3-SW2	Dry	10/30/04	1	27
P-58-TP4-B1	Dry	11/1/04	1	32
P-58-TP4-B2	Moist	11/1/04	1	13
P-58-TP4-SW1	Dry	11/1/04	1	44
P-58-TP4-SW2	Dry	11/1/04	1	21
P-58-TPA-B1	Dry	11/1/04	1	47
P-58-TPA-B2	Dry	11/1/04	1	0
P-58-TPA-B3	Saturated	11/1/04	1	1
P-58-TPA-B4	Saturated	11/1/04	1	0
P-58-TPA-SW1	Dry	11/1/04	1	769
P-58-TPA-SW2	Dry	11/1/04	1	7

TABLE 5-2
Tank Farm 5 UST Testpitting
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-58-TPB-B1	Dry	11/1/04	1	25
P-58-TPB-B2	Dry	11/1/04	1	36
P-58-TPB-B3	Dry	11/1/04	1	22
P-58-TPB-B4	Dry	11/1/04	1	28
P-58-TPB-SW1	Dry	11/1/04	1	39
P-58-TPB-SW2	Slightly Moist	11/1/04	1	25
P-58-TPC-B1	Dry	11/1/04	1	25
P-58-TPC-B2	Dry	11/1/04	1	26
P-58-TPC-B3	Dry	11/1/04	1	18
P-58-TPC-B4	Dry	11/1/04	1	23
P-58-TPC-SW1	Dry	11/1/04	1	19
P-58-TPC-SW2	Dry	11/1/04	1	33
P-58-TPD-B1	Slightly Moist	11/1/04	1	22
P-58-TPD-B2	Moist	11/1/04	1	46
P-58-TPD-B3	Moist	11/1/04	1	21
P-58-TPD-B4	Moist	11/1/04	1	26
P-58-TPD-SW1	Dry	11/1/04	1	48
P-58-TPD-SW2	Dry	11/1/04	1	19

TABLE 5-3
Tank Farm 4 UST Testpitting
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-42-TP3-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		69	500	N	N	10/26/04	SW8015	52882-1	
L-40-TPD-B3	Soil	Total Petroleum Hydrocarbons (TPH)		24	500	N	N	10/26/04	SW8015	52882-2	
L-40-TP1-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		133	500	N	N	10/26/04	SW8015	52882-3	
L-44-TP1-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/10/04	SW8015	52957-1	
TF4-L-40-TP4-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	16	500	N	N	10/26/04	SW8015	52882-4	
TF4-L-40-TP3-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		19	500	N	N	10/26/04	SW8015	52882-5	
TF4-L-40-TP2-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		16	500	N	N	10/26/04	SW8015	52882-6	
TF4-L-40-TP1-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	18	500	N	N	10/27/04	SW8015	52882-7	
TF4-L-42-TP3-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		18	500	N	N	10/27/04	SW8015	52882-8	
TF4-L-48-TP1-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	16	500	N	N	10/27/04	SW8015	52894-1	
TF4-L-48-TP4-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	18	500	N	N	10/27/04	SW8015	52894-2	
TF4-L-48-TP3-SW1	Soil	Total Petroleum Hydrocarbons (TPH)	U	16	500	N	N	10/27/04	SW8015	52894-3	
TF4-L-48-TP2-B2	Soil	Total Petroleum Hydrocarbons (TPH)		18	500	N	N	10/27/04	SW8015	52894-4	
TF4-L-45-TP1-SW2	Soil	Total Petroleum Hydrocarbons (TPH)		37	500	N	N	10/27/04	SW8015	52894-5	
TF4-L-45-TP4-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	16	500	N	N	10/27/04	SW8015	52894-6	
TF4-L-45-TP3-B2	Soil	Total Petroleum Hydrocarbons (TPH)		24	500	N	N	10/27/04	SW8015	52894-7	
TF4-L-45-TP2-SW1	Soil	Total Petroleum Hydrocarbons (TPH)	U	18	500	N	N	10/28/04	SW8015	52894-8	
TF4-L-42-TP4-SW1	Soil	Total Petroleum Hydrocarbons (TPH)	U	15	500	N	N	10/28/04	SW8015	52894-9	
TF4-L-42-TP1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		44	500	N	N	10/28/04	SW8015	52894-10	
TF4-L-42-TP2-SW1	Soil	Total Petroleum Hydrocarbons (TPH)	U	16	500	N	N	10/28/04	SW8015	52894-11	
TF4-L-44-TP1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		67	500	N	N	11/09/04	SW8015	52957-2	
TF4-L-44-TP3-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	19	500	N	N	11/09/04	SW8015	52957-3	
TF4-L-44-TPD-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		31	500	N	N	11/09/04	SW8015	52957-4	
L-48-TP1-SW2	Soil	Total Petroleum Hydrocarbons (TPH)		35	500	N	N	11/06/04	SW8015	52915-1	
L-40-TPA-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	20	500	N	N	11/06/04	SW8015	52966-1	
L-44-TP1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		188	500	N	N	11/06/04	SW8015	52966-2	
L-44-TPB-B4	Soil	Total Petroleum Hydrocarbons (TPH)	U	16	500	N	N	11/06/04	SW8015	52966-3	
L-48-TP4-B2	Soil	Total Petroleum Hydrocarbons (TPH)		16	500	N	N	11/06/04	SW8015	52966-4	
L-48-TP1-B2	Soil	Total Petroleum Hydrocarbons (TPH)		46	500	N	N	11/06/04	SW8015	52966-5	
L-48-TP1-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		20	500	N	N	11/06/04	SW8015	52966-6	
L-42-TP1-B2	Soil	Total Petroleum Hydrocarbons (TPH)		24	500	N	N	11/06/04	SW8015	52966-7	
L-42-TP1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		16	500	N	N	11/06/04	SW8015	52966-8	
L-42-TPB-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	16	500	N	N	11/06/04	SW8015	52966-9	
L-42-TP1-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		31	500	N	N	11/06/04	SW8015	52966-10	
L-45-TP1-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		18	500	N	N	11/06/04	SW8015	52966-11	
L-45-TP4-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	16	500	N	N	11/06/04	SW8015	52966-12	
L-44-TP1-B1D	Soil	Total Petroleum Hydrocarbons (TPH)		156	500	N	N	11/06/04	SW8016	52966-13	
L-40-TP1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		31	500	N	N	1/4/2005	SW8015	53346-1	
L-40-TP1-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		74	500	N	N	1/4/2005	SW8015	53346-2	
L-40-TP1-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/4/2005	SW8015	53346-3	

TABLE 5-4
Tank Farm 4 UST Testpitting
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-40-TP1-SW1	Soil	Acetone		0.095	7800	N	N	11/08/2004	SW8260B	596828	67-64-1
		Benzene	U	0.0048	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0048	10	N	N				75-27-4
		Bromoform	U	0.0048	81	N	N				75-25-2
		Bromomethane	U	0.0048	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0048	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0048	210	N	N				108-90-7
		Chloroform	U	0.0048	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0048	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0048	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0048	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0048	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0048	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0048	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0048	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0048	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0048	71	N	N				100-41-4
		Ethylene dibromide	U	0.0048	0.01	N	N				
		Isopropyl benzene	U	0.0048	27	N	N				98-82-8
		Methyl ethyl ketone		0.01	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0048	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0048	390	N	N				1634-04-4
		Methylene chloride	U	0.0048	45	N	N				75-09-2
		Styrene	U	0.0048	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0048	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0048	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0048	12	N	N				127-18-4
		Toluene	U	0.0048	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0048	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0048	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0048	13	N	N				79-01-6
		Vinyl chloride	U	0.0048	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0048	110	N	N				1330-20-7

TABLE 5-4
Tank Farm 4 UST Testpitting
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-44-TP1-B1	Soil	Acetone		0.044	7800	N	N	11/16/2004	SW8260B	598082	67-64-1
		Benzene	U	0.0045	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0045	10	N	N				75-27-4
		Bromoform	U	0.0045	81	N	N				75-25-2
		Bromomethane	U	0.0045	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0045	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0045	210	N	N				108-90-7
		Chloroform	U	0.0045	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0045	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0045	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0045	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0045	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0045	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0045	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0045	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0045	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0045	71	N	N				100-41-4
		Ethylene dibromide	U	0.0045	0.01	N	N				
		Isopropyl benzene	U	0.0045	27	N	N				98-82-8
		Methyl ethyl ketone		0.0049	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0045	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0045	390	N	N				1634-04-4
		Methylene chloride	J	0.00088	45	N	N				75-09-2
		Styrene	U	0.0045	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0045	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0045	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0045	12	N	N				127-18-4
		Toluene	U	0.0045	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0045	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0045	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0045	13	N	N				79-01-6
		Vinyl chloride	U	0.0045	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0045	110	N	N				1330-20-7

TABLE 5-4
Tank Farm 4 UST Testpitting
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-44-TP1-B1D	Soil	Acetone		0.071	7800	N	N	11/16/2004	SW8260B	598082	67-64-1
		Benzene	U	0.0041	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0041	10	N	N				75-27-4
		Bromoform	U	0.0041	81	N	N				75-25-2
		Bromomethane	U	0.0041	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0041	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0041	210	N	N				108-90-7
		Chloroform	U	0.0041	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0041	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0041	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0041	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0041	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0041	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0041	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0041	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0041	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0041	71	N	N				100-41-4
		Ethylene dibromide	U	0.0041	0.01	N	N				
		Isopropyl benzene	U	0.0041	27	N	N				98-82-8
		Methyl ethyl ketone		0.011	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0041	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0041	390	N	N				1634-04-4
		Methylene chloride	J	0.00076	45	N	N				75-09-2
		Styrene	U	0.0041	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0041	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0041	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0041	12	N	N				127-18-4
		Toluene	U	0.0041	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0041	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0041	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0041	13	N	N				79-01-6
		Vinyl chloride	U	0.0041	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0041	110	N	N				1330-20-7

TABLE 5-5
Tank Farm 4 UST Testpitting
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-40-TP1-SW1	Soil	Acenaphthene	U	0.32	43	N	N	11/10/2004	SW8270	52968-3	83-32-9
		Acenaphthylene	U	0.32	23	N	N				208-96-8
		Anthracene	U	0.32	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.32	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.32	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.32	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.32	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.32	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.32	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.32	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.32	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.32	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.32	310	N	N				106-47-8
		2-Chlorophenol	U	0.32	50	N	N				95-57-8
		Chrysene	U	0.32	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.32	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.32	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.32	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.32	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.32	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.32	30	N	N				120-83-2
		Diethyl phthalate	U	0.32	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.32	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.32	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.32	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.32	0.9	N	N				121-14-2
		Fluoranthene	U	0.32	20	N	N				206-44-0
		Fluorene	U	0.32	28	N	N				86-73-7
		Hexachlorobenzene	U	0.32	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.32	8.2	N	N				87-68-3
		Hexachloroethane	U	0.32	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.32	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.32	123	N	N				91-57-6
		Naphthalene	U	0.32	54	N	N				91-20-3
		Pentachlorophenol	U	0.32	5.3	N	N				87-86-5
		Phenanthrene	U	0.32	40	N	N				85-01-8
		Phenol	U	0.32	6000	N	N				108-95-2
		Pyrene	U	0.32	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.32	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.32	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.32	58	N	N				88-06-2

TABLE 5-5
Tank Farm 4 UST Testpitting
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-44-TP1-B1	Soil	Acenaphthene	U	0.29	43	N	N	11/13/2000	SW8270	53013-1	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 5-5
Tank Farm 4 UST Testpitting
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-44-TP1-B1D	Soil	Acenaphthene	U	0.28	43	N	N	11/13/2000	SW8270	53013-2	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 5-6
Tank Farm 5 UST Testpitting
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-49-TP1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		207	500	N	N	11/10/04	SW8015	52938-1	
L-49-TP1-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	11/12/04	SW8015	53016-4	
L-49-TP1-SW2	Soil	Total Petroleum Hydrocarbons (TPH)		33	500	N	N	11/10/04	SW8015	52938-2	
L-58-TP1-SW2	Soil	Total Petroleum Hydrocarbons (TPH)		45	500	N	N	11/10/04	SW8015	52938-3	
L-58-TP3-B1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/10/04	SW8015	52938-4	
L-58-TPA-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		64	500	N	N	11/04/04	SW8015	52957-1	
L-58-TP1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		36	500	N	N	11/12/04	SW8015	53016-8	
L-58-TP2-B1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/12/04	SW8015	53016-9	
L-58-TP2-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	11/12/04	SW8015	53016-10	
L-54-TPA-SW1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/12/04	SW8015	53016-5	
L-54-TPC-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	11/12/04	SW8015	53016-6	
L-54-TPC-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/12/04	SW8015	53016-7	
L-51-TP1-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		228	500	N	N	11/12/04	SW8015	53016-1	
L-51-TP1-SW1D	Soil	Total Petroleum Hydrocarbons (TPH)		142	500	N	N	11/13/04	SW8015	53016-2	
L-51-TPA-B1	Soil	Total Petroleum Hydrocarbons (TPH)		92	500	N	N	11/11/04	SW8015	53002-15	
L-51-TPB-B1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/11/04	SW8015	53016-3	
L-50-TP1-SW2	Soil	Total Petroleum Hydrocarbons (TPH)		59	500	N	N	11/13/04	SW8015	53016-11	
L-50-TPB-B4	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	11/11/04	SW8015	53002-7	
L-50-TPA-B1	Soil	Total Petroleum Hydrocarbons (TPH)		373	500	N	N	11/10/04	SW8015	53002-1	
L-50-TPA-B3	Soil	Total Petroleum Hydrocarbons (TPH)		2460	500	Y	N	11/12/04	SW8015	53002-2	
L-50-TPA-B4	Soil	Total Petroleum Hydrocarbons (TPH)		3610	500	Y	N	11/12/04	SW8015	53002-3	
L-50-TPA-B4D	Soil	Total Petroleum Hydrocarbons (TPH)		4780	500	Y	N	11/12/04	SW8015	53002-16	
L-50-TP1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		73	500	N	N	11/11/04	SW8015	53002-4	
L-50-TP1-B2	Soil	Total Petroleum Hydrocarbons (TPH)		935	500	Y	N	11/12/04	SW8015	53002-5	
L-50-TP1-SW1	Soil	Total Petroleum Hydrocarbons (TPH)		45	500	N	N	11/11/04	SW8015	53002-6	
L-50-TPB-SW2	Soil	Total Petroleum Hydrocarbons (TPH)		553	500	Y	N	11/11/04	SW8015	53002-8	
L-50-TP2-SW2	Soil	Total Petroleum Hydrocarbons (TPH)		71	500	N	N	11/11/04	SW8015	53002-9	
L-50-TPD-B2	Soil	Total Petroleum Hydrocarbons (TPH)		554	500	Y	N	11/11/04	SW8015	53002-10	
L-50-TP4-B1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/11/04	SW8015	53002-13	
L-50-TPD-B3	Soil	Total Petroleum Hydrocarbons (TPH)		6400	500	Y	N	11/12/04	SW8015	53002-11	
L-50-TPD-B4	Soil	Total Petroleum Hydrocarbons (TPH)		8720	500	Y	N	11/12/04	SW8015	53002-12	
L-50-TP4-B2	Soil	Total Petroleum Hydrocarbons (TPH)		21800	500	Y	N	11/12/04	SW8015	53002-14	
L-50-TP3-B1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/12/04	SW8015	53016-12	
L-50-TP3-B2	Soil	Total Petroleum Hydrocarbons (TPH)		1700	500	Y	N	11/13/04	SW8015	53016-13	
L-50-TP3-B1D	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/15/04	SW8015	53016-14	
L-50-TPD-B3	Soil	Total Petroleum Hydrocarbons (TPH)		6400	500	Y	N	11/12/2004	SW8015		
L-50-TPD-B4	Soil	Total Petroleum Hydrocarbons (TPH)		8720	500	Y	N	11/12/2004	SW8015		
L-50-TP4-B2	Soil	Total Petroleum Hydrocarbons (TPH)		21800	500	Y	N	11/12/2004	SW8015		
L-50-TP3-B1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	11/12/2004	SW8015		
L-50-TP3-B2	Soil	Total Petroleum Hydrocarbons (TPH)		1700	500	Y	N	11/13/2004	SW8015		
TF5-L-51-TPC-SWB	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/6/2005	SW8015	53360-1	
TF5-L-51-TPC-BA	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/6/2005	SW8015	53360-2	
TF5-L-51-TPC-SWA	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/6/2005	SW8015	53360-3	

TABLE 5-6
Tank Farm 5 UST Testpitting
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-58-TPD-SWC	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-4	
TF5-L-58-TPD-SWA	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-5	
TF5-L-58-TPD-SWB	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-6	
TF5-L-58-TP3-SWB	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-7	
TF5-L-58-TP3-SWA	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-8	
TF5-L-58-TP3-SWC	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-9	
TF5-L-49-TPB-SWA	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-10	
TF5-L-49-TPB-SWB	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/6/2005	SW8015	53360-11	
TF5-L-49-TPB-SWB-D	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-12	
TF5-L-49-TPB-SWC	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-13	
TF5-L-54-TPD-SWC	Soil	Total Petroleum Hydrocarbons (TPH)		52	500	N	N	1/6/2005	SW8015	53360-14	
TF5-L-54-TPD-SWB	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/6/2005	SW8015	53360-15	
TF5-L-54-TPD-SWA	Soil	Total Petroleum Hydrocarbons (TPH)		38	500	N	N	1/6/2005	SW8015	53360-16	

TABLE 5-7
Tank Farm 5 UST Testpitting
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-49-TP1-B1	Soil	Acetone		0.043	7800	N	N	11/15/2004	SW8260B	598075	67-64-1
		Benzene	U	0.0044	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0044	10	N	N				75-27-4
		Bromoform	U	0.0044	81	N	N				75-25-2
		Bromomethane	U	0.0044	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0044	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0044	210	N	N				108-90-7
		Chloroform	U	0.0044	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0044	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0044	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0044	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0044	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0044	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0044	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0044	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0044	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0044	71	N	N				100-41-4
		Ethylene dibromide	U	0.0044	0.01	N	N				
		Isopropyl benzene	U	0.0044	27	N	N				98-82-8
		Methyl ethyl ketone		0.0058	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0044	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0044	390	N	N				1634-04-4
		Methylene chloride	U	0.0044	45	N	N				75-09-2
		Styrene	U	0.0044	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0044	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0044	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0044	12	N	N				127-18-4
		Toluene	U	0.0044	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0044	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0044	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0044	13	N	N				79-01-6
		Vinyl chloride	U	0.0044	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0044	110	N	N				1330-20-7

TABLE 5-7
Tank Farm 5 UST Testpitting
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-50-TPA-B1	Soil	Acetone	U	0.51	7800	N	N	11/22/2004	SW8260B	599186	67-64-1
		Benzene	U	0.51	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.51	10	N	N				75-27-4
		Bromoform	U	0.51	81	N	N				75-25-2
		Bromomethane	U	0.51	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.51	1.5	N	N				56-23-5
		Chlorobenzene	U	0.51	210	N	N				108-90-7
		Chloroform	U	0.51	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.51	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.51	0.5	Y	Y				96-12-8
		1,1-Dichloroethane	U	0.51	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.51	0.2	Y	Y				75-35-4
		1,2-Dichloroethane	U	0.51	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.51	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.51	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.51	1.9	N	N				78-87-5
		Ethyl benzene	U	0.51	71	N	N				100-41-4
		Ethylene dibromide	U	0.51	0.01	Y	Y				
		Isopropyl benzene	U	0.51	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.51	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.51	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.51	390	N	N				1634-04-4
		Methylene chloride	U	0.51	45	N	N				75-09-2
		Styrene	U	0.51	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.51	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.51	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.51	12	N	N				127-18-4
		Toluene	U	0.51	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.51	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.51	3.6	N	N				79-00-5
		Trichloroethylene	U	0.51	13	N	N				79-01-6
		Vinyl chloride	U	0.51	0.02	Y	Y				75-01-4
		Xylenes (total)	U	0.51	110	N	N				1330-20-7

TABLE 5-7
Tank Farm 5 UST Testpitting
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-51-TP1-SW1	Soil	Acetone		0.043	7800	N	N	11/22/2004	SW8260B	599188	67-64-1
		Benzene	U	0.0046	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0046	10	N	N				75-27-4
		Bromoform	U	0.0046	81	N	N				75-25-2
		Bromomethane	U	0.0046	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0046	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0046	210	N	N				108-90-7
		Chloroform	U	0.0046	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0046	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0046	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0046	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0046	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0046	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0046	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0046	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0046	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0046	71	N	N				100-41-4
		Ethylene dibromide	U	0.0046	0.01	N	N				
		Isopropyl benzene	U	0.0046	27	N	N				98-82-8
		Methyl ethyl ketone		0.0092	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0046	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0046	390	N	N				1634-04-4
		Methylene chloride	U	0.0046	45	N	N				75-09-2
		Styrene	U	0.0046	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0046	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0046	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0046	12	N	N				127-18-4
		Toluene	U	0.0046	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0046	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0046	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0046	13	N	N				79-01-6
		Vinyl chloride	U	0.0046	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0046	110	N	N				1330-20-7

TABLE 5-7
Tank Farm 5 UST Testpitting
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-51-TP1-SW1D	Soil	Acetone		0.023	7800	N	N	11/22/2004	SW8260B	599188	67-64-1
		Benzene	U	0.0041	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0041	10	N	N				75-27-4
		Bromoform	U	0.0041	81	N	N				75-25-2
		Bromomethane	U	0.0041	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0041	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0041	210	N	N				108-90-7
		Chloroform	U	0.0041	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0041	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0041	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0041	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0041	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0041	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0041	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0041	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0041	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0041	71	N	N				100-41-4
		Ethylene dibromide	U	0.0041	0.01	N	N				
		Isopropyl benzene	U	0.0041	27	N	N				98-82-8
		Methyl ethyl ketone		0.0053	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0041	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0041	390	N	N				1634-04-4
		Methylene chloride	U	0.0041	45	N	N				75-09-2
		Styrene	U	0.0041	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0041	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0041	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0041	12	N	N				127-18-4
		Toluene	U	0.0041	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0041	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0041	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0041	13	N	N				79-01-6
		Vinyl chloride	U	0.0041	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0041	110	N	N				1330-20-7

TABLE 5-8
Tank Farm 5 UST Testpitting
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-49-TP1-B1	Soil	Acenaphthene	U	0.28	43	N	N	11/13/2000	SW8270	53012-1	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	J	0.18	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	J	0.234	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	J	0.19	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	J	0.179	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	J	0.181	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 5-8
Tank Farm 5 UST Testpitting
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-50-TPA-B1	Soil	Acenaphthene	U	0.28	43	N	N	11/23/2000	SW8270	53038-1	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 5-8
Tank Farm 5 UST Testpitting
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-51-TP1-SW1	Soil	Acenaphthene	U	0.27	43	N	N	11/23/2000	SW8270	53038-3	83-32-9
		Acenaphthylene	U	0.27	23	N	N				208-96-8
		Anthracene	U	0.27	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.27	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.27	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.27	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.27	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.27	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.27	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.27	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.27	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.27	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.27	310	N	N				106-47-8
		2-Chlorophenol	U	0.27	50	N	N				95-57-8
		Chrysene	U	0.27	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.27	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.27	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.27	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.27	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.27	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.27	30	N	N				120-83-2
		Diethyl phthalate	U	0.27	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.27	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.27	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.27	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.27	0.9	N	N				121-14-2
		Fluoranthene	U	0.27	20	N	N				206-44-0
		Fluorene	U	0.27	28	N	N				86-73-7
		Hexachlorobenzene	U	0.27	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.27	8.2	N	N				87-68-3
		Hexachloroethane	U	0.27	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.27	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.27	123	N	N				91-57-6
		Naphthalene	U	0.27	54	N	N				91-20-3
		Pentachlorophenol	U	0.27	5.3	N	N				87-86-5
		Phenanthrene	U	0.27	40	N	N				85-01-8
		Phenol	U	0.27	6000	N	N				108-95-2
		Pyrene	J	0.145	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.27	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.27	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.27	58	N	N				88-06-2

TABLE 5-8
Tank Farm 5 UST Testpitting
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-51-TP1-SW1D	Soil	Acenaphthene	U	0.27	43	N	N	11/23/2000	SW8270	53038-4	83-32-9
		Acenaphthylene	U	0.27	23	N	N				208-96-8
		Anthracene	U	0.27	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.27	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.27	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.27	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.27	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.27	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.27	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.27	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.27	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.27	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.27	310	N	N				106-47-8
		2-Chlorophenol	U	0.27	50	N	N				95-57-8
		Chrysene	U	0.27	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.27	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.27	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.27	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.27	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.27	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.27	30	N	N				120-83-2
		Diethyl phthalate	U	0.27	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.27	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.27	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.27	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.27	0.9	N	N				121-14-2
		Fluoranthene	J	0.166	20	N	N				206-44-0
		Fluorene	U	0.27	28	N	N				86-73-7
		Hexachlorobenzene	U	0.27	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.27	8.2	N	N				87-68-3
		Hexachloroethane	U	0.27	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.27	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.27	123	N	N				91-57-6
		Naphthalene	U	0.27	54	N	N				91-20-3
		Pentachlorophenol	U	0.27	5.3	N	N				87-86-5
		Phenanthrene	U	0.27	40	N	N				85-01-8
		Phenol	U	0.27	6000	N	N				108-95-2
		Pyrene	J	0.195	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.27	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.27	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.27	58	N	N				88-06-2

TABLE 6-1
Tank Farm 4 Main Fuel Transect
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF4-P-CC-01-6-8	Moist	11/17/04	1	23
TF4-P-CC-02-6-8	Dry	11/17/04	1	18
TF4-P-CC-03-8-10	Dry	11/17/04	1	75
TF4-P-CC-04-9-11	Dry	11/17/04	1	16
TF4-P-CC-05-9-11	Slightly Moist	11/17/04	1	16
TF4-P-CC-06-6-8	Slightly Moist	11/17/04	1	15
TF4-P-CC-07-6-8	Dry	11/17/04	1	13
TF4-P-CC-08-8-10	Slightly Moist	11/17/04	1	18
TF4-P-CC-09-8-10	Dry	11/17/04	1	7
TF4-P-CC-10-8-10	Slightly Moist	11/17/04	1	12
TF4-P-CC-11-8-10	Slightly Moist	11/18/04	1	24
TF4-P-CC-12-7-9	Dry	11/18/04	1	28
TF4-P-CC-13-5-7	Slightly Moist	11/18/04	1	23
TF4-P-CC-14-9-11	Dry	11/18/04	1	37
TF4-P-CC-15-6-8	Dry	11/18/04	1	25
TF4-P-CC-16-9-11	Dry	11/18/04	1	28
TF4-P-CC-17-9-11	Dry	11/18/04	1	41
TF4-P-CC-18-9-11	Dry	11/18/04	1	27
TF4-P-CC-19-8.5-10.5	Dry	12/30/04	1	10
TF4-P-CC-20-8.5-10.5	Dry	12/30/04	1	16

TABLE 6-2
Tank Farm 5 Main Fuel Transect
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF5-P-CC-10-5-7	Moist	Date Analyzed	1	2
TF5-P-CC-11-5-7	Dry	Date Analyzed	1	9
TF5-P-CC-12-5-7	Dry	Date Analyzed	1	16
TF5-P-CC-13-5-7	Moist	Date Analyzed	1	5
TF5-P-CC-14-4.5-6.5	Moist	Date Analyzed	1	9
TF5-P-CC-15-4.5-6.5	Dry	12/15/04	1	17
TF5-P-CC-15-4.5-6.5	Dry	12/15/04	1	15
TF5-P-CC-1-5-7	Moist	12/15/04	1	0
TF5-P-CC-1-5-7	Moist	12/13/04	1	45
TF5-P-CC-16-5-7	Dry	12/15/04	1	0
TF5-P-CC-16-5-7	Dry	12/15/04	1	5
TF5-P-CC-17-5-7	Dry	12/15/04	1	2
TF5-P-CC-18-4-6	Moist	12/15/04	1	0
TF5-P-CC-19-4-6	Moist	12/15/04	1	17
TF5-P-CC-20-4-6	Moist	12/15/04	1	0
TF5-P-CC-21-4-6	Dry	12/15/04	1	1
TF5-P-CC-21-4-6	Moist	12/15/04	1	0
TF5-P-CC-2-4.5-6.5	Moist	12/15/04	1	14
TF5-P-CC-2-4-6	Dry	12/15/04	1	13
TF5-P-CC-3-4-6	Moist	12/15/04	1	0
TF5-P-CC-4-5-7	Saturated	12/15/04	1	0
TF5-P-CC-4-5-7	Moist	12/15/04	1	0
TF5-P-CC-5-5-7	Saturated	12/15/04	1	0
TF5-P-CC-5-5-7	Saturated	12/30/04	1	14
TF5-P-CC-5-5-7	Moist	12/30/04	1	0
TF5-P-CC-6-5.5-7.5	Moist	12/30/04	1	5
TF5-P-CC-8-5.5-7.5	Dry	12/15/04	1	9
TF5-P-CC-8-5.5-7.5	Dry	12/15/04	1	5
TF5-P-CC-9-5.5-7.5	Dry	12/15/04	1	21

TABLE 6-3
Tank Farm 4 Loop Piping
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF4-P-BSW-1-4-6	Saturated	12/21/04	1	37
TF4-P-BSW-2-4-6	Dry	12/21/04	1	38
TF4-P-BSW-5-4-6	Dry	12/21/04	1	31
TF4-P-BSW-6-4-6	Dry	12/21/04	1	25
TF4-P-BSW-7-4-6	Dry	12/21/04	1	25
TF4-P-BSW-8-4-6	Dry	12/23/04	1	10
TF4-P-BSW-9-4-6	Dry	12/23/04	1	32
TF4-P-BSW-10-4-6	Dry	12/23/04	1	10
TF4-P-BSW-11-4-6	Dry	12/23/04	1	0
TF4-P-BSW-12-4-6	Dry	12/23/04	1	3
TF4-P-BSW-13-4-6	Dry	12/23/04	1	4
TF4-P-BSW-14-4-6	Dry	12/23/04	1	22
TF4-P-BSW-15-4.5-6.5	Dry	12/23/04	1	834
TF4-P-BSW-16-4-6	Dry	12/23/04	1	4
TF4-P-BSW-17-4.5-6.5	Moist	12/23/04	1	2
TF4-P-BSW-18-4.5-6.5	Moist	12/23/04	1	1926
TF4-P-BSW-19-4.5-6.5	Dry	12/23/04	1	0
TF4-P-BSW-20-4-6	Dry	12/23/04	1	6
TF4-P-BSW-21-4-6	Dry	12/23/04	1	9
TF4-P-BSW-22-4-6	Dry	12/23/04	1	0
TF4-P-BSW-23-4-6	Dry	12/23/04	1	542
TF4-P-BSW-24-4-6	Dry	12/23/04	1	1
TF4-P-BSW-25-4-6	Dry	12/23/04	1	0
TF4-P-BSW-26-4-6	Dry	12/23/04	1	0
TF4-P-BSW-27-4.5-6.5	Dry	12/23/04	1	13
TF4-P-BSW-28-4-6	Dry	12/23/04	1	0
TF4-P-BSW-29-4.5-6.5	Dry	12/23/04	1	3
TF4-P-BSW-29-7-9	Dry	12/30/04	1	28
TF4-P-BSW-30-4.5-6.5	Dry	12/23/04	1	20
TF4-P-BSW-30-7-9	Dry	12/30/04	1	11
TF4-P-BSW-31-5-7	Dry	12/23/04	1	0
TF4-P-BSW-32-5-7	Dry	12/23/04	1	53
TF4-P-BSW-33-5-7	Dry	12/23/04	1	9
TF4-P-BSW-34-5-7	Dry	12/23/04	1	0
TF4-P-BSW-3-4-6	Moist	12/21/04	1	29
TF4-P-BSW-35-5-7	Dry	12/23/04	1	0
TF4-P-BSW-36-5-7	Dry	12/30/04	1	451
TF4-P-BSW-37-5.5-7.5	Saturated	12/30/04	1	2
TF4-P-BSW-38-6-8	Dry	12/30/04	1	8
TF4-P-BSW-39-5-7	Moist	12/30/04	1	0
TF4-P-BSW-40-4-6	Moist	12/30/04	1	12
TF4-P-BSW-41-4-6	Moist	12/30/04	1	23
TF4-P-BSW-42-4-6	Moist	12/30/04	1	27
TF4-P-BSW-43-4-6	Moist	12/30/04	1	5
TF4-P-BSW-44-4.5-6.5	Dry	12/30/04	1	10
TF4-P-BSW-4-4-6	Dry	12/21/04	1	32
TF4-P-BSW-45-4.5-6.5	Moist	12/30/04	1	57
TF4-P-BSW-46-5-7	Dry	12/30/04	1	28

**TABLE 6-3
Tank Farm 4 Loop Piping
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF4-P-BSW-47-5-7	Moist	12/30/04	1	61
TF4-P-BSW-48-5-7	Saturated	12/30/04	1	39
TF4-P-BSW-49-5.5-7.5	Dry	12/30/04	1	32
TF4-P-BSW-50-5-7	Dry	12/30/04	1	157
TF4-P-BSW-51-5.5-7.5	Dry	12/30/04	1	25
TF4-P-BSW-52-5.5-7.5	Moist	12/30/04	1	29
TF4-P-BSW-53-6-8	Dry	12/30/04	1	16
TF4-P-BSW-54-6-8	Dry	12/30/04	1	6
TF4-P-FL-1-5.5-7.5	Moist	12/17/04	1	0
TF4-P-FL-2-6-8	Moist	12/17/04	1	77
TF4-P-FL-4-6.5-8.5	Dry	12/17/04	1	45
TF4-P-FL-5-6.5-8.5	Dry	12/17/04	1	0
TF4-P-FL-7-6.5-8.5	Dry	12/17/04	1	0
TF4-P-FL-8-6.5-8.5	Dry	12/17/04	1	0
TF4-P-FL-9-6.5-8.5	Dry	12/17/04	1	0
TF4-P-FL-10-6.5-8.5	Dry	12/17/04	1	0
TF4-P-FL-11-6-8	Dry	12/17/04	1	7
TF4-P-FL-13-5.5-7.5	Dry	12/17/04	1	12
TF4-P-FL-14-5.5-7.5	Dry	12/17/04	1	0
TF4-P-FL-16-5.5-7.5	Dry	12/17/04	1	34
TF4-P-FL-17-5.5-7.5	Dry	12/17/04	1	0
TF4-P-FL-18-5.5-7.5	Dry	12/17/04	1	0
TF4-P-FL-19-6-8	Dry	12/17/04	1	0
TF4-P-FL-20-6-8	Dry	12/17/04	1	0
TF4-P-FL-21-6-8	Dry	12/17/04	1	0
TF4-P-FL-22-6-8	Dry	12/17/04	1	0
TF4-P-FL-23-6-8	Dry	12/17/04	1	0
TF4-P-FL-24-6-8	Dry	12/21/04	1	28
TF4-P-FL-25-5.5-7.5	Moist	12/21/04	1	22
TF4-P-FL-26-5.5-7.5	Moist	12/21/04	1	16
TF4-P-FL-27-5.5-7.5	Dry	12/21/04	1	38
TF4-P-FL-28-5.5-7.5	Dry	12/21/04	1	34
TF4-P-FL-29-5.5-7.5	Dry	12/21/04	1	12
TF4-P-FL-30-5.5-7.5	Dry	12/21/04	1	37
TF4-P-FL-31-5.5-7.5	Dry	12/21/04	1	22
TF4-P-FL-32-5.5-7.5	Dry	12/21/04	1	19
TF4-P-FL-33-5-7	Dry	12/21/04	1	208
TF4-P-FL-34-4-6	Dry	12/21/04	1	92
TF4-P-FL-35-3-5	Dry	12/21/04	1	44
TF4-P-FL-36-2.5-4.5	Dry	12/21/04	1	47
TF4-P-FL-37-2.5-4.5	Dry	12/21/04	1	172
TF4-P-FL-38-4-6	Dry	12/21/04	1	31
TF4-P-FL-39-5-7	Dry	12/21/04	1	52
TF4-P-FL-40-5-7	Dry	12/21/04	1	288
TF4-P-FL-41-6.5-8.5	Dry	12/21/04	1	98
TF4-P-FL-42-6-8	Dry	12/21/04	1	27
TF4-P-FL-43-5-7	Dry	12/21/04	1	8
TF4-P-FL-44-5-7	Dry	12/21/04	1	109

TABLE 6-3
Tank Farm 4 Loop Piping
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF4-P-FL-45-5-7	Dry	12/21/04	1	23
TF4-P-FL-46-5-7	Dry	12/21/04	1	45
TF4-P-FL-47-4.5-6.5	Dry	12/21/04	1	24
TF4-P-FL-48-4.5-6.5	Dry	12/21/04	1	130
TF4-P-FL-49-4.5-6.5	Dry	12/21/04	1	23
TF4-P-FL-50-4.5-6.5	Dry	12/21/04	1	9
TF4-P-FL-51-4.5-6.5	Dry	12/21/04	1	16
TF4-P-FL-52-4.5-6.5	Dry	12/21/04	1	19
TF4-P-FL-53-4.5-6.5	Dry	12/21/04	1	20
TF4-P-FL-54-4.5-6.5	Dry	12/21/04	1	50
TF4-P-FL-55-4.5-6.5	Dry	12/21/04	1	88
TF4-P-FL-56-4.5-6.5	Dry	12/21/04	1	48
TF4-P-FL-57-4.5-6.5	Moist	12/21/04	1	70
TF4-P-FL-58-5-7	Dry	12/21/04	1	89
TF4-P-FL-59-5.5-7.5	Dry	12/21/04	1	71
TF4-P-FL-60-5.5-7.5	Moist	12/21/04	1	31

TABLE 6-4
Tank Farm 4 Loop Piping Testpitting
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-FL-33-5-7	Soil	Total Petroleum Hydrocarbons (TPH)	U	20	500	N	N	1/3/2005	EPA8015	53330-4	
TF4-L-FL-37-2.5-4.5	Soil	Total Petroleum Hydrocarbons (TPH)		31	500	N	N	1/3/2005	EPA8015	53330-5	
TF4-L-FL-40-6.5-8.5	Soil	Total Petroleum Hydrocarbons (TPH)		100	500	N	N	1/3/2005	EPA8015	53330-6	
TF4-L-FL-44-5-7	Soil	Total Petroleum Hydrocarbons (TPH)	U	20	500	N	N	1/3/2005	EPA8015	53330-7	
TF4-L-FL-48-4.5-6.5	Soil	Total Petroleum Hydrocarbons (TPH)		36	500	N	N	1/3/2005	EPA8015	53330-8	
TF4-L-BSW-23-4-6	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/3/2005	EPA8015	53330-10	
TF4-L-BSW-36-5-7	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/4/2005	EPA8015	53346-4	
TF4-L-BSW-50-5-7	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/4/2005	EPA8015	53346-5	

**TABLE 6-5
Tank Farm 5 Loop Piping
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF5-P-BSW-1-6-8	Slightly Moist	11/18/04	1	30
TF5-P-BSW-2-6-8	Dry	11/18/04	1	27
TF5-P-BSW-3-6-8	Slightly Moist	11/18/04	1	33
TF5-P-BSW-4-6-8	Moist	11/18/04	1	38
TF5-P-BSW-5-6-8	Slightly Moist	11/18/04	1	28
TF5-P-BSW-6-4-6	Dry	12/15/04	1	0
TF5-P-BSW-7-4-6	Dry	12/15/04	1	0
TF5-P-BSW-8-4-6	Dry	12/15/04	1	27
TF5-P-BSW-9-4-6	Dry	12/15/04	1	29
TF5-P-BSW-10-4-6	Dry	12/15/04	1	0
TF5-P-BSW-11-5-7	Dry	12/30/04	1	22
TF5-P-BSW-12-4.5-6.5	Dry	12/30/04	1	5
TF5-P-BSW-13-4-6	Dry	12/30/04	1	22
TF5-P-BSW-14-3-5	Dry	12/15/04	1	0
TF5-P-BSW-15-6-8	Dry	12/15/04	1	14
TF5-P-BSW-16-6-8	Saturated	12/15/04	1	0
TF5-P-BSW-16-6-8	Dry	12/30/04	1	39
TF5-P-BSW-17-6-8	Moist	12/15/04	1	2043
TF5-P-BSW-18-6-8	Saturated	12/15/04	1	0
TF5-P-BSW-19-6-8	Dry	12/15/04	1	114
TF5-P-BSW-20-6-8	Dry	12/15/04	1	0
TF5-P-BSW-21-6-8	Dry	12/15/04	1	0
TF5-P-BSW-22-6-8	Dry	12/15/04	1	0
TF5-P-BSW-23-6.5-8.5	Moist	12/15/04	1	0
TF5-P-BSW-24-6.5-8.5	Dry	12/15/04	1	24
TF5-P-BSW-25-7-9	Dry	12/15/04	1	1
TF5-P-BSW-26-6.5-8.5	Moist	12/15/04	1	0
TF5-P-BSW-27-6-8	Moist	12/15/04	1	0
TF5-P-BSW-28-6-8	Dry	12/15/04	1	12
TF5-P-BSW-31-6.5-8.5	Dry	12/30/04	1	37
TF5-P-BSW-32-6.5-8.5	Dry	12/30/04	1	28
TF5-P-BSW-33-6.5-8.5	Dry	12/30/04	1	59
TF5-P-BSW-34-6-8	Dry	12/30/04	1	16
TF5-P-BSW-35-6-8	Dry	12/30/04	1	12
TF5-P-BSW-36-6-8	Dry	12/30/04	1	17
TF5-P-BSW-37-5.5-7.5	Dry	12/30/04	1	12
TF5-P-BSW-38-8.5-10.5	Dry	12/30/04	1	11
TF5-P-BSW-39-6-8	Dry	12/30/04	1	29
TF5-P-BSW-40-5.5-7.5	Dry	12/30/04	1	18
TF5-P-BSW-41-6.5-8.5	Dry	12/30/04	1	6
TF5-P-BSW-42-6-8	Dry	12/30/04	1	18
TF5-P-BSW-43-5.5-7.5	Dry	12/30/04	1	32
TF5-P-FL-1	Slightly Moist	11/18/04	1	25
TF5-P-FL-2-7-9	Slightly Moist	11/18/04	1	32
TF5-P-FL-3-6.5-8.5	Saturated	12/17/04	1	0
TF5-P-FL-3-7-9	Slightly Moist	11/18/04	1	161
TF5-P-FL-4-7-9	Slightly Moist	11/18/04	1	31
TF5-P-FL-5-7-9	Slightly Moist	11/18/04	1	29

**TABLE 6-5
Tank Farm 5 Loop Piping
Petroflag Summary Results**

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF5-P-FL-6-6.5-8.5	Moist	12/17/04	1	0
TF5-P-FL-6-9-11	Slightly Moist	11/18/04	1	41
TF5-P-FL-7-6-8	Dry	11/18/04	1	31
TF5-P-FL-8-7-9	Dry	11/18/04	1	22
TF5-P-FL-9-7-9	Moist	11/18/04	1	25
TF5-P-FL-10-7-9	Slightly Moist	11/18/04	1	39
TF5-P-FL-11-7-9	Slightly Moist	11/18/04	1	37
TF5-P-FL-12-5.5-7.5	Dry	12/17/04	1	0
TF5-P-FL-13-5-7	Moist	12/15/04	1	15
TF5-P-FL-13-5-7	Moist	12/15/04	1	28
TF5-P-FL-14-5-7	Moist	12/15/04	1	9
TF5-P-FL-14-5-7	Moist	12/15/04	1	0
TF5-P-FL-15-5.5-7.5	Dry	12/17/04	1	0
TF5-P-FL-15-6-8	Dry	12/15/04	1	0
TF5-P-FL-16-6-8	Dry	12/15/04	1	47
TF5-P-FL-17-5.5-7.5	Dry	12/15/04	1	29
TF5-P-FL-18-7-9	Dry	12/17/04	1	0

TABLE 6-6
Tank Farm 5 Loop Piping Testpitting
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-BSW-19-6-8	Soil	Total Petroleum Hydrocarbons (TPH)		45	500	N	N	12/30/2004	EPA8015	53329-3	
TF5-L-BSW-19-6-8D	Soil	Total Petroleum Hydrocarbons (TPH)		66	500	N	N	12/30/2004	EPA8015	53329-4	

TABLE 6-7
Tank Farm 4 Loop Piping Removal Action
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF4-P-BSW-15-SW1-6.5	Moist	1/5/05	1	22
TF4-P-BSW-15-SW2-6.5	Slightly Moist	1/5/05	1	29
TF4-P-BSW-15-SW3-6.5	Moist	1/5/05	1	22
TF4-P-BSW-15-SW4-6.5	Slightly Moist	1/5/05	1	33
TF4-P-BSW-15-B1-7.0	Dry	1/5/05	1	0
TF4-P-BSW-15-B2-7.0	Dry	1/5/05	1	21
TF4-P-BSW-15-SW1-2.0	Dry	1/6/05	1	29
TF4-P-BSW-15-SW2-2.0	Slightly Moist	1/6/05	1	33
TF4-P-BSW-15-SW3-2.0	Dry	1/6/05	1	26
TF4-P-BSW-15-SW4-2.0	Slightly Moist	1/6/05	1	20

**TABLE 6-8
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample TPH Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-B1	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	3/28/2005	EPA8015	53715-4	
TF4-L-BSW18-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	3/28/2005	EPA8015	53715-5	
TF4-L-BSW18-B3	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	3/28/2005	EPA8015	53715-6	
TF4-L-BSW18-B4	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	4/4/2005	EPA8015	53736-1	
TF4-L-BSW18-SW1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	3/28/2005	EPA8015	53715-7	
TF4-L-BSW18-SW2	Soil	Total Petroleum Hydrocarbons (TPH)		58	500	N	N	3/29/2005	EPA8015	53715-8	
TF4-L-BSW18-SW3	Soil	Total Petroleum Hydrocarbons (TPH)		37	500	N	N	3/29/2005	EPA8015	53715-9	
TF4-L-BSW18-SW4	Soil	Total Petroleum Hydrocarbons (TPH)		101	500	N	N	3/29/2005	EPA8015	53715-10	
TF4-L-BSW18-SW5	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	3/29/2005	EPA8015	53715-11	
TF4-L-BSW18-SW6	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	3/29/2005	EPA8015	53715-12	
C-TF4-BSW15-B1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/20/2005	SW8015	53400-12	
C-TF4-BSW15-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/20/2005	SW8015	53400-13	
C-TF4-BSW15-SW4-6.5	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/20/2005	SW8015	53400-14	
C-TF4-BSW15-SW4-2	Soil	Total Petroleum Hydrocarbons (TPH)		27	500	N	N	1/20/2005	SW8015	53400-15	
C-TF4-BSW15-SW1-6.5	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/20/2005	SW8015	53400-16	
C-TF4-BSW15-SW1-2	Soil	Total Petroleum Hydrocarbons (TPH)		29	500	N	N	1/20/2005	SW8015	53400-17	
C-TF4-BSW15-SW2-2	Soil	Total Petroleum Hydrocarbons (TPH)	U	26	500	N	N	1/20/2005	SW8015	53400-18	
C-TF4-BSW15-SW2-6.5	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/20/2005	SW8015	53400-19	
C-TF4-BSW15-SW3-6.5	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/20/2005	SW8015	53400-20	
C-TF4-BSW15-SW3-2	Soil	Total Petroleum Hydrocarbons (TPH)	U	26	500	N	N	1/20/2005	SW8015	53400-21	

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-B1	Soil	Acetone	B	0.0066	7800	N	N	3/30/2005	SW8260B	612333	67-64-1
		Benzene	U	0.0035	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0035	10	N	N				75-27-4
		Bromoform	U	0.0035	81	N	N				75-25-2
		Bromomethane	U	0.0035	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0035	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0035	210	N	N				108-90-7
		Chloroform	U	0.0035	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0035	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0035	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0035	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0035	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0035	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0035	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0035	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0035	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0035	71	N	N				100-41-4
		Ethylene dibromide	U	0.0035	0.01	N	N				
		Isopropyl benzene	U	0.0035	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0035	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0035	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0035	390	N	N				1634-04-4
		Methylene chloride	J	0.001	45	N	N				75-09-2
		Styrene	U	0.0035	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0035	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0035	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0035	12	N	N				127-18-4
		Toluene	U	0.0035	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0035	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0035	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0035	13	N	N				79-01-6
		Vinyl chloride	U	0.0035	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0035	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-B2	Soil	Acetone	B	0.0048	7800	N	N	3/30/2005	SW8260B	612334	67-64-1
		Benzene	U	0.003	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.003	10	N	N				75-27-4
		Bromoform	U	0.003	81	N	N				75-25-2
		Bromomethane	U	0.003	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.003	1.5	N	N				56-23-5
		Chlorobenzene	U	0.003	210	N	N				108-90-7
		Chloroform	U	0.003	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.003	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.003	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.003	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.003	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.003	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.003	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.003	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.003	1.9	N	N				78-87-5
		Ethyl benzene	U	0.003	71	N	N				100-41-4
		Ethylene dibromide	U	0.003	0.01	N	N				
		Isopropyl benzene	U	0.003	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.003	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.003	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.003	390	N	N				1634-04-4
		Methylene chloride	J	0.00084	45	N	N				75-09-2
		Styrene	U	0.003	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.003	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.003	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.003	12	N	N				127-18-4
		Toluene	U	0.003	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.003	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.003	3.6	N	N				79-00-5
		Trichloroethylene	U	0.003	13	N	N				79-01-6
		Vinyl chloride	U	0.003	0.02	N	N				75-01-4
		Xylenes (total)	U	0.003	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-B3	Soil	Acetone	B	0.0044	7800	N	N	3/30/2005	SW8260B	612335	67-64-1
		Benzene	U	0.0033	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0033	10	N	N				75-27-4
		Bromoform	U	0.0033	81	N	N				75-25-2
		Bromomethane	U	0.0033	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0033	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0033	210	N	N				108-90-7
		Chloroform	U	0.0033	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0033	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0033	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0033	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0033	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0033	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0033	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0033	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0033	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0033	71	N	N				100-41-4
		Ethylene dibromide	U	0.0033	0.01	N	N				
		Isopropyl benzene	U	0.0033	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0033	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0033	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0033	390	N	N				1634-04-4
		Methylene chloride	J	0.00081	45	N	N				75-09-2
		Styrene	U	0.0033	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0033	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0033	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0033	12	N	N				127-18-4
		Toluene	U	0.0033	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0033	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0033	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0033	13	N	N				79-01-6
		Vinyl chloride	U	0.0033	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0033	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-B4	Soil	Acetone		0.012	7800	N	N	4/1/2005	SW8260B	612605	67-64-1
		Benzene	U	0.0026	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0026	10	N	N				75-27-4
		Bromoform	U	0.0026	81	N	N				75-25-2
		Bromomethane	U	0.0026	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0026	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0026	210	N	N				108-90-7
		Chloroform	U	0.0026	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0026	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0026	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0026	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0026	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0026	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0026	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0026	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0026	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0026	71	N	N				100-41-4
		Ethylene dibromide	U	0.0026	0.01	N	N				
		Isopropyl benzene	U	0.0026	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0026	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0026	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	J	0.0012	390	N	N				1634-04-4
		Methylene chloride	J	0.0012	45	N	N				75-09-2
		Styrene	U	0.0026	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0026	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0026	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0026	12	N	N				127-18-4
		Toluene	U	0.0026	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0026	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0026	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0026	13	N	N				79-01-6
		Vinyl chloride	U	0.0026	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0026	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW1	Soil	Acetone	B	0.092	7800	N	N	3/30/2005	SW8260B	612336	67-64-1
		Benzene	U	0.0041	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0041	10	N	N				75-27-4
		Bromoform	U	0.0041	81	N	N				75-25-2
		Bromomethane	U	0.0041	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0041	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0041	210	N	N				108-90-7
		Chloroform	U	0.0041	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0041	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0041	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0041	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0041	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0041	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0041	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0041	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0041	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0041	71	N	N				100-41-4
		Ethylene dibromide	U	0.0041	0.01	N	N				
		Isopropyl benzene	U	0.0041	27	N	N				98-82-8
		Methyl ethyl ketone		0.012	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0041	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0041	390	N	N				1634-04-4
		Methylene chloride	J	0.0011	45	N	N				75-09-2
		Styrene	U	0.0041	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0041	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0041	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0041	12	N	N				127-18-4
		Toluene	U	0.0041	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0041	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0041	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0041	13	N	N				79-01-6
		Vinyl chloride	U	0.0041	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0041	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW2	Soil	Acetone		0.17	7800	N	N	3/30/2005	SW8260B	612337	67-64-1
		Benzene	U	0.005	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.005	10	N	N				75-27-4
		Bromoform	U	0.005	81	N	N				75-25-2
		Bromomethane	U	0.005	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.005	1.5	N	N				56-23-5
		Chlorobenzene	U	0.005	210	N	N				108-90-7
		Chloroform	U	0.005	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.005	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.005	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.005	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.005	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.005	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.005	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.005	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.005	1.9	N	N				78-87-5
		Ethyl benzene	U	0.005	71	N	N				100-41-4
		Ethylene dibromide	U	0.005	0.01	N	N				
		Isopropyl benzene	U	0.005	27	N	N				98-82-8
		Methyl ethyl ketone		0.017	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.005	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.005	390	N	N				1634-04-4
		Methylene chloride	J	0.0012	45	N	N				75-09-2
		Styrene	U	0.005	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.005	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.005	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.005	12	N	N				127-18-4
		Toluene	U	0.005	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.005	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.005	3.6	N	N				79-00-5
		Trichloroethylene	U	0.005	13	N	N				79-01-6
		Vinyl chloride	U	0.005	0.02	N	N				75-01-4
		Xylenes (total)	U	0.005	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW3	Soil	Acetone		0.18	7800	N	N	3/31/2005	SW8260B	612338	67-64-1
		Benzene	U	0.005	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.005	10	N	N				75-27-4
		Bromoform	U	0.005	81	N	N				75-25-2
		Bromomethane	U	0.005	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.005	1.5	N	N				56-23-5
		Chlorobenzene	U	0.005	210	N	N				108-90-7
		Chloroform	U	0.005	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.005	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.005	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.005	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.005	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.005	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.005	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.005	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.005	1.9	N	N				78-87-5
		Ethyl benzene	U	0.005	71	N	N				100-41-4
		Ethylene dibromide	U	0.005	0.01	N	N				
		Isopropyl benzene	U	0.005	27	N	N				98-82-8
		Methyl ethyl ketone		0.02	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.005	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.005	390	N	N				1634-04-4
		Methylene chloride	J	0.0014	45	N	N				75-09-2
		Styrene	U	0.005	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.005	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.005	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.005	12	N	N				127-18-4
		Toluene	U	0.005	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.005	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.005	3.6	N	N				79-00-5
		Trichloroethylene	U	0.005	13	N	N				79-01-6
		Vinyl chloride	U	0.005	0.02	N	N				75-01-4
		Xylenes (total)	U	0.005	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW4	Soil	Acetone		0.1	7800	N	N	3/31/2005	SW8260B	612339	67-64-1
		Benzene	U	0.005	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.005	10	N	N				75-27-4
		Bromoform	U	0.005	81	N	N				75-25-2
		Bromomethane	U	0.005	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.005	1.5	N	N				56-23-5
		Chlorobenzene	U	0.005	210	N	N				108-90-7
		Chloroform	U	0.005	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.005	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.005	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.005	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.005	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.005	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.005	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.005	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.005	1.9	N	N				78-87-5
		Ethyl benzene	U	0.005	71	N	N				100-41-4
		Ethylene dibromide	U	0.005	0.01	N	N				
		Isopropyl benzene	U	0.005	27	N	N				98-82-8
		Methyl ethyl ketone		0.0096	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.005	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.005	390	N	N				1634-04-4
		Methylene chloride	J	0.0013	45	N	N				75-09-2
		Styrene	U	0.005	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.005	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.005	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.005	12	N	N				127-18-4
		Toluene	U	0.005	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.005	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.005	3.6	N	N				79-00-5
		Trichloroethylene	U	0.005	13	N	N				79-01-6
		Vinyl chloride	U	0.005	0.02	N	N				75-01-4
		Xylenes (total)	U	0.005	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW5	Soil	Acetone		0.07	7800	N	N	3/31/2005	SW8260B	612340	67-64-1
		Benzene	U	0.0034	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0034	10	N	N				75-27-4
		Bromoform	U	0.0034	81	N	N				75-25-2
		Bromomethane	U	0.0034	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0034	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0034	210	N	N				108-90-7
		Chloroform	U	0.0034	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0034	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0034	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0034	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0034	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0034	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0034	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0034	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0034	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0034	71	N	N				100-41-4
		Ethylene dibromide	U	0.0034	0.01	N	N				
		Isopropyl benzene	U	0.0034	27	N	N				98-82-8
		Methyl ethyl ketone		0.0096	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0034	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0034	390	N	N				1634-04-4
		Methylene chloride	J	0.001	45	N	N				75-09-2
		Styrene	U	0.0034	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0034	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0034	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0034	12	N	N				127-18-4
		Toluene	U	0.0034	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0034	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0034	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0034	13	N	N				79-01-6
		Vinyl chloride	U	0.0034	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0034	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW6	Soil	Acetone		0.18	7800	N	N	3/31/2005	SW8260B	612341	67-64-1
		Benzene	U	0.005	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.005	10	N	N				75-27-4
		Bromoform	U	0.005	81	N	N				75-25-2
		Bromomethane	U	0.005	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.005	1.5	N	N				56-23-5
		Chlorobenzene	U	0.005	210	N	N				108-90-7
		Chloroform	U	0.005	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.005	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.005	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.005	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.005	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.005	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.005	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.005	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.005	1.9	N	N				78-87-5
		Ethyl benzene	U	0.005	71	N	N				100-41-4
		Ethylene dibromide	U	0.005	0.01	N	N				
		Isopropyl benzene	U	0.005	27	N	N				98-82-8
		Methyl ethyl ketone		0.02	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.005	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.005	390	N	N				1634-04-4
		Methylene chloride	J	0.0012	45	N	N				75-09-2
		Styrene	U	0.005	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.005	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.005	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.005	12	N	N				127-18-4
		Toluene	U	0.005	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.005	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.005	3.6	N	N				79-00-5
		Trichloroethylene	U	0.005	13	N	N				79-01-6
		Vinyl chloride	U	0.005	0.02	N	N				75-01-4
		Xylenes (total)	U	0.005	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW4-2	Soil	Acetone		0.1	7800	N	N	1/20/2005	SW8260B	605015	67-64-1
		Benzene	U	0.0033	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0033	10	N	N				75-27-4
		Bromoform	U	0.0033	81	N	N				75-25-2
		Bromomethane	U	0.0033	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0033	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0033	210	N	N				108-90-7
		Chloroform	U	0.0033	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0033	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0033	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0033	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0033	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0033	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0033	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0033	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0033	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0033	71	N	N				100-41-4
		Ethylene dibromide	U	0.0033	0.01	N	N				
		Isopropyl benzene	U	0.0033	27	N	N				98-82-8
		Methyl ethyl ketone		0.01	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0033	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0033	390	N	N				1634-04-4
		Methylene chloride	U	0.0033	45	N	N				75-09-2
		Styrene	U	0.0033	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0033	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0033	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0033	12	N	N				127-18-4
		Toluene	J	0.00074	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0033	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0033	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0033	13	N	N				79-01-6
		Vinyl chloride	U	0.0033	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0033	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-B1	Soil	Acetone		0.027	7800	N	N	1/20/2005	SW8260B	605012	67-64-1
		Benzene	U	0.003	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.003	10	N	N				75-27-4
		Bromoform	U	0.003	81	N	N				75-25-2
		Bromomethane	U	0.003	0.8	N	N				74-83-9
		Carbon tetrachloride	J	0.00086	1.5	N	N				56-23-5
		Chlorobenzene	U	0.003	210	N	N				108-90-7
		Chloroform	U	0.003	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.003	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.003	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.003	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.003	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.003	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.003	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.003	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.003	1.9	N	N				78-87-5
		Ethyl benzene	U	0.003	71	N	N				100-41-4
		Ethylene dibromide	U	0.003	0.01	N	N				
		Isopropyl benzene	U	0.003	27	N	N				98-82-8
		Methyl ethyl ketone		0.0039	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.003	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.003	390	N	N				1634-04-4
		Methylene chloride	U	0.003	45	N	N				75-09-2
		Styrene	U	0.003	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.003	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.003	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.003	12	N	N				127-18-4
		Toluene	J	0.00064	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.003	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.003	3.6	N	N				79-00-5
		Trichloroethylene	U	0.003	13	N	N				79-01-6
		Vinyl chloride	U	0.003	0.02	N	N				75-01-4
		Xylenes (total)			110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-B2	Soil	Acetone	B	0.019	7800	N	N	1/20/2005	SW8260B	605013	67-64-1
		Benzene	U	0.0033	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0033	10	N	N				75-27-4
		Bromoform	U	0.0033	81	N	N				75-25-2
		Bromomethane	U	0.0033	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0033	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0033	210	N	N				108-90-7
		Chloroform	U	0.0033	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0033	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0033	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0033	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0033	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0033	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0033	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0033	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0033	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0033	71	N	N				100-41-4
		Ethylene dibromide	U	0.0033	0.01	N	N				
		Isopropyl benzene	U	0.0033	27	N	N				98-82-8
		Methyl ethyl ketone		0.0036	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0033	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0033	390	N	N				1634-04-4
		Methylene chloride	U	0.0033	45	N	N				75-09-2
		Styrene	U	0.0033	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0033	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0033	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0033	12	N	N				127-18-4
		Toluene	J	0.00067	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0033	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0033	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0033	13	N	N				79-01-6
		Vinyl chloride	U	0.0033	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0033	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW1-6.5	Soil	Acetone	B	0.014	7800	N	N	1/20/2005	SW8260B	605016	67-64-1
		Benzene	U	0.0031	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0031	10	N	N				75-27-4
		Bromoform	U	0.0031	81	N	N				75-25-2
		Bromomethane	U	0.0031	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0031	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0031	210	N	N				108-90-7
		Chloroform	U	0.0031	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0031	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0031	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0031	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0031	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0031	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0031	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0031	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0031	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0031	71	N	N				100-41-4
		Ethylene dibromide	U	0.0031	0.01	N	N				
		Isopropyl benzene	U	0.0031	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0031	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0031	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0031	390	N	N				1634-04-4
		Methylene chloride	U	0.0031	45	N	N				75-09-2
		Styrene	U	0.0031	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0031	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0031	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0031	12	N	N				127-18-4
		Toluene	U	0.0031	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0031	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0031	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0031	13	N	N				79-01-6
		Vinyl chloride	U	0.0031	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0031	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW2-6.5	Soil	Acetone		0.018	7800	N	N	1/20/2005	SW8260B	605019	67-64-1
		Benzene	U	0.0027	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0027	10	N	N				75-27-4
		Bromoform	U	0.0027	81	N	N				75-25-2
		Bromomethane	U	0.0027	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0027	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0027	210	N	N				108-90-7
		Chloroform	U	0.0027	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0027	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0027	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0027	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0027	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0027	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0027	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0027	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0027	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0027	71	N	N				100-41-4
		Ethylene dibromide	U	0.0027	0.01	N	N				
		Isopropyl benzene	U	0.0027	27	N	N				98-82-8
		Methyl ethyl ketone		0.003	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0027	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0027	390	N	N				1634-04-4
		Methylene chloride	U	0.0027	45	N	N				75-09-2
		Styrene	U	0.0027	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0027	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0027	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0027	12	N	N				127-18-4
		Toluene	U	0.0027	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0027	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0027	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0027	13	N	N				79-01-6
		Vinyl chloride	U	0.0027	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0027	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW3-6.5	Soil	Acetone		0.019	7800	N	N	1/20/2005	SW8260B	605020	67-64-1
		Benzene	U	0.003	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.003	10	N	N				75-27-4
		Bromoform	U	0.003	81	N	N				75-25-2
		Bromomethane	U	0.003	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.003	1.5	N	N				56-23-5
		Chlorobenzene	U	0.003	210	N	N				108-90-7
		Chloroform	U	0.003	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.003	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.003	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.003	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.003	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.003	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.003	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.003	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.003	1.9	N	N				78-87-5
		Ethyl benzene	U	0.003	71	N	N				100-41-4
		Ethylene dibromide	U	0.003	0.01	N	N				
		Isopropyl benzene	U	0.003	27	N	N				98-82-8
		Methyl ethyl ketone		0.0039	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.003	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.003	390	N	N				1634-04-4
		Methylene chloride	U	0.003	45	N	N				75-09-2
		Styrene	U	0.003	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.003	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.003	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.003	12	N	N				127-18-4
		Toluene	U	0.003	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.003	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.003	3.6	N	N				79-00-5
		Trichloroethylene	U	0.003	13	N	N				79-01-6
		Vinyl chloride	U	0.003	0.02	N	N				75-01-4
		Xylenes (total)	U	0.003	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW4-6.5	Soil	Acetone		0.08	7800	N	N	1/20/2005	SW8260B	605014	67-64-1
		Benzene	U	0.0031	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0031	10	N	N				75-27-4
		Bromoform	U	0.0031	81	N	N				75-25-2
		Bromomethane	U	0.0031	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0031	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0031	210	N	N				108-90-7
		Chloroform	U	0.0031	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0031	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0031	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0031	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0031	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0031	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0031	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0031	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0031	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0031	71	N	N				100-41-4
		Ethylene dibromide	U	0.0031	0.01	N	N				
		Isopropyl benzene	U	0.0031	27	N	N				98-82-8
		Methyl ethyl ketone		0.0088	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0031	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0031	390	N	N				1634-04-4
		Methylene chloride	U	0.0031	45	N	N				75-09-2
		Styrene	U	0.0031	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0031	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0031	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0031	12	N	N				127-18-4
		Toluene	U	0.0031	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0031	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0031	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0031	13	N	N				79-01-6
		Vinyl chloride	U	0.0031	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0031	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW1-2	Soil	Acetone	B	0.048	7800	N	N	1/20/2005	SW8260B	605017	67-64-1
		Benzene	U	0.0026	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0026	10	N	N				75-27-4
		Bromoform	U	0.0026	81	N	N				75-25-2
		Bromomethane	U	0.0026	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0026	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0026	210	N	N				108-90-7
		Chloroform	U	0.0026	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0026	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0026	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0026	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0026	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0026	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0026	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0026	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0026	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0026	71	N	N				100-41-4
		Ethylene dibromide	U	0.0026	0.01	N	N				
		Isopropyl benzene	U	0.0026	27	N	N				98-82-8
		Methyl ethyl ketone		0.0077	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0026	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0026	390	N	N				1634-04-4
		Methylene chloride	U	0.0026	45	N	N				75-09-2
		Styrene	U	0.0026	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0026	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0026	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0026	12	N	N				127-18-4
		Toluene	U	0.0026	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0026	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0026	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0026	13	N	N				79-01-6
		Vinyl chloride	U	0.0026	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0026	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW2-2	Soil	Acetone	B	0.078	7800	N	N	1/20/2005	SW8260B	605018	67-64-1
		Benzene	U	0.0035	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0035	10	N	N				75-27-4
		Bromoform	U	0.0035	81	N	N				75-25-2
		Bromomethane	U	0.0035	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0035	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0035	210	N	N				108-90-7
		Chloroform	U	0.0035	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0035	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0035	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0035	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0035	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0035	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0035	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0035	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0035	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0035	71	N	N				100-41-4
		Ethylene dibromide	U	0.0035	0.01	N	N				
		Isopropyl benzene	U	0.0035	27	N	N				98-82-8
		Methyl ethyl ketone		0.0072	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0035	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0035	390	N	N				1634-04-4
		Methylene chloride	U	0.0035	45	N	N				75-09-2
		Styrene	U	0.0035	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0035	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0035	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0035	12	N	N				127-18-4
		Toluene	U	0.0035	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0035	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0035	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0035	13	N	N				79-01-6
		Vinyl chloride	U	0.0035	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0035	110	N	N				1330-20-7

TABLE 6-9
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW3-2	Soil	Acetone		0.04	7800	N	N	1/20/2005	SW8260B	605021	67-64-1
		Benzene	U	0.0029	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0029	10	N	N				75-27-4
		Bromoform	U	0.0029	81	N	N				75-25-2
		Bromomethane	U	0.0029	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0029	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0029	210	N	N				108-90-7
		Chloroform	U	0.0029	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0029	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0029	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0029	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0029	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0029	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0029	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0029	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0029	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0029	71	N	N				100-41-4
		Ethylene dibromide	U	0.0029	0.01	N	N				
		Isopropyl benzene	U	0.0029	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0029	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0029	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0029	390	N	N				1634-04-4
		Methylene chloride	U	0.0029	45	N	N				75-09-2
		Styrene	U	0.0029	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0029	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0029	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0029	12	N	N				127-18-4
		Toluene	U	0.0029	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0029	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0029	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0029	13	N	N				79-01-6
		Vinyl chloride	U	0.0029	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0029	110	N	N				1330-20-7

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-B1	Soil	Acenaphthene	U	0.31	43	N	N	3/31/2005	SW8270	53715-4	83-32-9
		Acenaphthylene	U	0.31	23	N	N				208-96-8
		Anthracene	U	0.31	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.31	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.31	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.31	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.31	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.31	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.31	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.31	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.31	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.31	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.31	310	N	N				106-47-8
		2-Chlorophenol	U	0.31	50	N	N				95-57-8
		Chrysene	U	0.31	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.31	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.31	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		Diethyl phthalate	U	0.31	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.31	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.31	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.31	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.31	0.9	N	N				121-14-2
		Fluoranthene	U	0.31	20	N	N				206-44-0
		Fluorene	U	0.31	28	N	N				86-73-7
		Hexachlorobenzene	U	0.31	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.31	8.2	N	N				87-68-3
		Hexachloroethane	U	0.31	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.31	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.31	123	N	N				91-57-6
		Naphthalene	U	0.31	54	N	N				91-20-3
		Pentachlorophenol	U	0.31	5.3	N	N				87-86-5
		Phenanthrene	U	0.31	40	N	N				85-01-8
		Phenol	U	0.31	6000	N	N				108-95-2
		Pyrene	U	0.31	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.31	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.31	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-B2	Soil	Acenaphthene	U	0.31	43	N	N	3/31/2005	SW8270	53715-5	83-32-9
		Acenaphthylene	U	0.31	23	N	N				208-96-8
		Anthracene	U	0.31	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.31	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.31	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.31	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.31	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.31	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.31	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.31	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.31	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.31	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.31	310	N	N				106-47-8
		2-Chlorophenol	U	0.31	50	N	N				95-57-8
		Chrysene	U	0.31	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.31	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.31	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		Diethyl phthalate	U	0.31	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.31	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.31	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.31	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.31	0.9	N	N				121-14-2
		Fluoranthene	U	0.31	20	N	N				206-44-0
		Fluorene	U	0.31	28	N	N				86-73-7
		Hexachlorobenzene	U	0.31	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.31	8.2	N	N				87-68-3
		Hexachloroethane	U	0.31	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.31	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.31	123	N	N				91-57-6
		Naphthalene	U	0.31	54	N	N				91-20-3
		Pentachlorophenol	U	0.31	5.3	N	N				87-86-5
		Phenanthrene	U	0.31	40	N	N				85-01-8
		Phenol	U	0.31	6000	N	N				108-95-2
		Pyrene	U	0.31	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.31	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.31	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-B3	Soil	Acenaphthene	U	0.3	43	N	N	3/31/2005	SW8270	53715-6	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-B4	Soil	Acenaphthene	U	0.28	43	N	N	4/6/2005	SW8270	53736-1RX	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW1	Soil	Acenaphthene	U	0.29	43	N	N	3/31/2005	SW8270	53715-7	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW2	Soil	Acenaphthene	U	0.31	43	N	N	3/31/2005	SW8270	53715-8	83-32-9
		Acenaphthylene	U	0.31	23	N	N				208-96-8
		Anthracene	U	0.31	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.31	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.31	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.31	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.31	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.31	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.31	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.31	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.31	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.31	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.31	310	N	N				106-47-8
		2-Chlorophenol	U	0.31	50	N	N				95-57-8
		Chrysene	U	0.31	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.31	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.31	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		Diethyl phthalate	U	0.31	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.31	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.31	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.31	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.31	0.9	N	N				121-14-2
		Fluoranthene	U	0.31	20	N	N				206-44-0
		Fluorene	U	0.31	28	N	N				86-73-7
		Hexachlorobenzene	U	0.31	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.31	8.2	N	N				87-68-3
		Hexachloroethane	U	0.31	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.31	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.31	123	N	N				91-57-6
		Naphthalene	U	0.31	54	N	N				91-20-3
		Pentachlorophenol	U	0.31	5.3	N	N				87-86-5
		Phenanthrene	U	0.31	40	N	N				85-01-8
		Phenol	U	0.31	6000	N	N				108-95-2
		Pyrene	U	0.31	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.31	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.31	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW3	Soil	Acenaphthene	U	0.28	43	N	N	3/31/2005	SW8270	53715-9	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW4	Soil	Acenaphthene	U	0.3	43	N	N	3/31/2005	SW8270	53715-10	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW5	Soil	Acenaphthene	U	0.28	43	N	N	3/31/2005	SW8270	53715-11	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-BSW18-SW6	Soil	Acenaphthene	U	0.3	43	N	N	3/31/2005	SW8270	53715-12	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-B1	Soil	Acenaphthene	U	0.29	43	N	N	1/19/2005	SW8270C	53400-12	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6- Trichlorophenol			58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-B2	Soil	Acenaphthene	U	0.3	43	N	N	1/19/2005	SW8270C	53400-13	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW4-6.5	Soil	Acenaphthene	U	0.3	43	N	N	1/19/2005	SW8270C	53400-14	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW4-2	Soil	Acenaphthene	U	0.3	43	N	N	1/19/2005	SW8270C	53400-15	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW1-6.5	Soil	Acenaphthene	U	0.29	43	N	N	1/19/2005	SW8270C	53400-16	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW1-2	Soil	Acenaphthene	U	0.29	43	N	N	1/19/2005	SW8270C	53400-17	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW2-2	Soil	Acenaphthene	U	0.33	43	N	N	1/19/2005	SW8270C	53400-18	83-32-9
		Acenaphthylene	U	0.33	23	N	N				208-96-8
		Anthracene	U	0.33	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.33	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.33	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.33	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.33	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.33	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.33	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.33	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.33	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.33	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.33	310	N	N				106-47-8
		2-Chlorophenol	U	0.33	50	N	N				95-57-8
		Chrysene	U	0.33	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.33	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.33	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.33	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.33	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.33	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.33	30	N	N				120-83-2
		Diethyl phthalate	U	0.33	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.33	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.33	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.33	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.33	0.9	N	N				121-14-2
		Fluoranthene	U	0.33	20	N	N				206-44-0
		Fluorene	U	0.33	28	N	N				86-73-7
		Hexachlorobenzene	U	0.33	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.33	8.2	N	N				87-68-3
		Hexachloroethane	U	0.33	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.33	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.33	123	N	N				91-57-6
		Naphthalene	U	0.33	54	N	N				91-20-3
		Pentachlorophenol	U	0.33	5.3	N	N				87-86-5
		Phenanthrene	U	0.33	40	N	N				85-01-8
		Phenol	U	0.33	6000	N	N				108-95-2
		Pyrene	U	0.33	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.33	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.33	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.33	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW2-6.5	Soil	Acenaphthene	U	0.29	43	N	N	1/19/2005	SW8270C	53400-19	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW3-6.5	Soil	Acenaphthene	U	0.3	43	N	N	1/19/2005	SW8270C	53400-20	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 6-10
Tank Farm 4 Loop Piping Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-BSW15-SW3-2	Soil	Acenaphthene	U	0.32	43	N	N	1/19/2005	SW8270C	53400-21	83-32-9
		Acenaphthylene	U	0.32	23	N	N				208-96-8
		Anthracene	U	0.32	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.32	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.32	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.32	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.32	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.32	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.32	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.32	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.32	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.32	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.32	310	N	N				106-47-8
		2-Chlorophenol	U	0.32	50	N	N				95-57-8
		Chrysene	U	0.32	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.32	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.32	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.32	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.32	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.32	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.32	30	N	N				120-83-2
		Diethyl phthalate	U	0.32	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.32	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.32	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.32	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.32	0.9	N	N				121-14-2
		Fluoranthene	U	0.32	20	N	N				206-44-0
		Fluorene	U	0.32	28	N	N				86-73-7
		Hexachlorobenzene	U	0.32	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.32	8.2	N	N				87-68-3
		Hexachloroethane	U	0.32	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.32	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.32	123	N	N				91-57-6
		Naphthalene	U	0.32	54	N	N				91-20-3
		Pentachlorophenol	U	0.32	5.3	N	N				87-86-5
		Phenanthrene	U	0.32	40	N	N				85-01-8
		Phenol	U	0.32	6000	N	N				108-95-2
		Pyrene	U	0.32	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.32	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.32	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.32	58	N	N				88-06-2

TABLE 6-11
Tank Farm 5 Oil/Water Separator BSW Piping
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/L)	GA Groundwater Objectives (mg/L)	Exceed GA Groundwater Objectives? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-O/W SEP-BSW	Water	Acetone	U	0.005	NA	NA	N	11/22/2004	SW8260B	599229	67-64-1
		Benzene	U	0.005	0.005	N	N				71-43-2
		Bromodichloromethane	U	0.005	NA	NA	N				75-27-4
		Bromoform	U	0.005	NA	NA	N				75-25-2
		Bromomethane	U	0.005	NA	NA	N				74-83-9
		Carbon tetrachloride	U	0.005	0.005	N	N				56-23-5
		Chlorobenzene	U	0.005	0.1	N	N				108-90-7
		Chloroform	U	0.005	NA	NA	N				67-66-3
		Dibromochloromethane	U	0.005	NA	NA	N				124-48-1
		Dibromochloropropane	U	0.005	0.0002	Y	Y				96-12-8
		1,1-Dichloroethane	U	0.005	NA	NA	N				75-34-3
		1,1-Dichloroethene	U	0.005	0.007	N	N				75-35-4
		1,2-Dichloroethane	U	0.005	0.005	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.005	0.07	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.005	0.1	N	N				156-60-5
		1,2-Dichloropropane	U	0.005	0.005	N	N				78-87-5
		Ethyl benzene	U	0.005	0.7	N	N				100-41-4
		Ethylene dibromide	U	0.005	0.00005	Y	Y				
		Isopropyl benzene	U	0.005	NA	NA	N				98-82-8
		Methyl ethyl ketone	U	0.005	NA	NA	N				78-93-3
		Methyl isobutyl ketone	U	0.005	NA	NA	N				108-10-1
		Methyl-tert-butyl-ether	U	0.005	0.04	N	N				1634-04-4
		Methylene chloride	U	0.005	0.005	N	N				75-09-2
		Styrene	U	0.005	0.1	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.005	NA	NA	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.005	NA	NA	N				79-34-5
		Tetrachloroethylene	U	0.005	0.005	N	N				127-18-4
		Toluene	U	0.005	1	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.005	0.2	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.005	0.005	N	N				79-00-5
		Trichloroethylene	U	0.005	0.005	N	N				79-01-6
		Vinyl chloride	U	0.005	0.002	Y	Y				75-01-4
		Xylenes (total)	U	0.005	10	N	N				1330-20-7

TABLE 6-12
Tank Farm 5 Oil/Water Separator BSW Piping
Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/L)	GA Groundwater Objectives (mg/L)	Exceed GA Groundwater Objectives? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-O/W SEP-BSW	Water	Antimony	U	0.0042	0.006	N	N	11/22/2004		599229	7440-36-0
		Arsenic	U	0.0031	NA	NA	N				7440-38-2
		Barium	B	0.0988	2	N	N				7440-39-3
		Beryllium	U	0.0003	0.004	N	N				7440-41-7
		Cadmium	U	0.0005	0.005	N	N				7440-43-9
		Chromium (total)	U	0.0011	0.1	N	N				7440-47-3
		Cobalt	U	0.0031	NA	NA	N				7440-48-4
		Lead		0.0047	0.015	N	N				7439-92-1
		Mercury	U	0.0001	0.002	N	N				7439-97-6
		Molybdenum	B	0.0041	NA	NA	N				7439-98-7
		Selenium	U	0.0031	0.05	N	N				7782-49-2
		Silver	U	0.0015	NA	NA	N				7440-22-4
		Tin	U	0.003	NA	NA	N				7440-31-5
		Vanadium	U	0.003	NA	NA	N				7440-62-2
		Zinc		0.0397	NA	NA	N				7440-66-6

TABLE 6-13
Tank Farm 5 Oil/Water Separator BSW Piping
PCB Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/L)	GA Groundwater Objectives (mg/L)	Exceed GA Groundwater Objectives? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-O/W SEP-BSW	Water	PCB-1016	U	0.0002				11/22/2004	EPA 8082	53084-1	
		PCB-1221	U	0.0002							
		PCB-1232	U	0.0002							
		PCB-1242	U	0.0002							
		PCB-1248	U	0.0002							
		PCB-1254	U	0.0002							
		PCB-1260	U	0.0002							
		Total PCBs	U	0.0002	0.0005	N	N				

TABLE 6-14
Tank Farm 5 Oil/Water Separator BSW Piping
Wet Chemistry Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/L)	GA Groundwater Objectives (mg/L)	Exceed GA Groundwater Objectives? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-O/W SEP-BSW	Water	pH		8.4 pH unit	NA	NA	N	11/22/2004		53084-1	
		Total Dissolved Solids		81.0	NA	NA	N				
		Total Suspended Solids		19.2	NA	NA	N				

TABLE 6-15
Tank Farm 4 Shunt Piping
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF4-P-37SP-1-5-7	Dry	12/23/04	1	25
TF4-P-37SP-2-5.5-7.5	Dry	12/23/04	1	0
TF4-P-37SP-3-6-8	Dry	12/23/04	1	0
TF4-P-37SP-4-6.5-8.5	Moist	12/23/04	1	12
TF4-P-38SP-1-4.5-6.5	Dry	12/23/04	1	52
TF4-P-38SP-2-4.5-6.5	Dry	12/23/04	1	2
TF4-P-39SP-2-4.5-6.5	Moist	12/23/04	1	0
TF4-P-40SP-2-6.5-8.5	Moist	12/23/04	1	0
TF4-P-41SP-1-6.5-8.5	Dry	12/23/04	1	33
TF4-P-41SP-2-6-8	Dry	12/23/04	1	0
TF4-P-41SP-3-6-8	Dry	12/23/04	1	0
TF4-P-41SP-4-5.5-7.5	Dry	12/23/04	1	0
TF4-P-42SP-1-5.5-7.5	Dry	12/23/04	1	18
TF4-P-42SP-2-5-7	Dry	12/23/04	1	0
TF4-P-43SP-1-4.5-6.5	Dry	12/23/04	1	88
TF4-P-43SP-2-5-7	Dry	12/23/04	1	0
TF4-P-43SP-3-5.5-7.5	Dry	12/23/04	1	0
TF4-P-44SP-1-5-7	Dry	12/23/04	1	3
TF4-P-44SP-2-6.5-8.5	Moist	12/23/04	1	8
TF4-P-45SP-1-5.5-7.5	Dry	12/23/04	1	1
TF4-P-45SP-2-4.5-6.5	Dry	12/23/04	1	8
TF4-P-45SP-3-3.5-5.5	Moist	12/23/04	1	495
TF4-P-45SP-4-2.5-4.5	Dry	12/23/04	1	9
TF4-P-46SP-1-3.5-5.5	Dry	12/23/04	1	13
TF4-P-46SP-2-5.5-7.5	Dry	12/23/04	1	0
TF4-P-47SP-1-3.5-5.5	Dry	12/23/04	1	0
TF4-P-47SP-2-6-8	Dry	12/23/04	1	0
TF4-P-48SP-1-6.5-8.5	Moist	12/23/04	1	40
TF4-P-48SP-2-6-8	Dry	12/23/04	1	0
TF4-P-48SP-3-6-8	Dry	12/23/04	1	0
TF4-P-48SP-4-5.5-7.5	Dry	12/23/04	1	0
TF4-P-NS-38-7-9	Slightly Moist	2/7/05	1	27
TF4-P-NS-39-7-9	Slightly Moist	2/7/05	1	7
TF4-P-NS-42-7-9	Moist	2/7/05	1	66

TABLE 6-16
Tank Farm 4 Shunt Piping
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-45SP-3-3.5-5.5	Soil	Total Petroleum Hydrocarbons (TPH)		597	500	Y	N	1/3/2005	EPA8015	53330-9	

TABLE 6-17
Tank Farm 4 Shunt Piping
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-45SP-3-3.5-5.5	Soil	Acetone	B	0.032	7800	N	N	1/6/2005	SW8260B	603814	67-64-1
		Benzene	U	0.0038	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0038	10	N	N				75-27-4
		Bromoform	U	0.0038	81	N	N				75-25-2
		Bromomethane	U	0.0038	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0038	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0038	210	N	N				108-90-7
		Chloroform	U	0.0038	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0038	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0038	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0038	920	N	N				75-34-4
		1,1-Dichloroethene	U	0.0038	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0038	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0038	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0038	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0038	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0038	71	N	N				100-41-4
		Ethylene dibromide	U	0.0038	0.01	N	N				
		Isopropyl benzene	U	0.0038	27	N	N				98-82-8
		Methyl ethyl ketone		0.0055	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0038	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0038	390	N	N				1634-04-4
		Methylene chloride	U	0.0038	45	N	N				75-09-2
		Styrene	U	0.0038	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0038	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0038	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0038	12	N	N				127-18-4
		Toluene	U	0.0038	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0038	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0038	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0038	13	N	N				79-01-6
		Vinyl chloride	U	0.0038	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0038	110	N	N				1330-20-7

TABLE 6-18
Tank Farm 4 Shunt Piping
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-45SP-3-3.5-5.5	Soil	Acenaphthene	U	0.27	43	N	N	1/6/2005	SW8270	53345-2	83-32-9
		Acenaphthylene	U	0.27	23	N	N				208-96-8
		Anthracene	U	0.27	35	N	N				120-12-7
		Benzo(a)anthracene	J	0.152	0.9	N	N				56-55-3
		Benzo(a)pyrene	J	0.209	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	J	0.242	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.27	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	J	0.208	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.27	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.27	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.27	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.27	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.27	310	N	N				106-47-8
		2-Chlorophenol	U	0.27	50	N	N				95-57-8
		Chrysene	J	0.255	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.27	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.27	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.27	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.27	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.27	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.27	30	N	N				120-83-2
		Diethyl phthalate	U	0.27	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.27	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.27	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.27	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.27	0.9	N	N				121-14-2
		Fluoranthene		0.295	20	N	N				206-44-0
		Fluorene	U	0.27	28	N	N				86-73-7
		Hexachlorobenzene	U	0.27	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.27	8.2	N	N				87-68-3
		Hexachloroethane	U	0.27	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.27	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.27	123	N	N				91-57-6
		Naphthalene	U	0.27	54	N	N				91-20-3
		Pentachlorophenol	U	0.27	5.3	N	N				87-86-5
		Phenanthrene	J	0.235	40	N	N				85-01-8
		Phenol	U	0.27	6000	N	N				108-95-2
		Pyrene		0.407	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.27	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.27	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.27	58	N	N				88-06-2

TABLE 6-19
Tank Farm 4 UST 39 Pump Chamber Removal Action
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-39-TP1-SW1-6.5	Moist	1/5/05	1	25
P-39-TP1-SW1-2.0	Dry	1/5/05	1	65
P-39-TP1-SW2-6.5	Dry	1/5/05	1	0
P-39-TP1-SW2-2.0	Dry	1/5/05	1	21
P-39-TP1-SW3-6.5	Dry	1/5/05	1	0
P-39-TP1-SW3-2.0	Dry	1/5/05	1	44
P-39-TP1-B1	Slightly Moist	1/5/05	1	51
P-39-TP1-B2	Slightly Moist	1/5/05	1	98
TF4-UST39-T39	Moist	12/2/04	1	866

TABLE 6-20
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#
C-TF4-39-B1	Soil	Total Petroleum Hydrocarbons (TPH)		42	500	N	N	1/19/2005	SW8015	53400-5
C-TF4-39-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/19/2005	SW8015	53400-3
C-TF4-39-B2-D	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/19/2005	SW8015	53400-4
C-TF4-39-SW2-6.5	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/20/2005	SW8015	53400-6
C-TF4-39-SW2-2	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/19/2005	SW8015	53400-7
C-TF4-39-SW1-6.5	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	1/19/2005	SW8015	53400-8
C-TF4-39-SW1-2	Soil	Total Petroleum Hydrocarbons (TPH)		26	500	N	N	1/19/2005	SW8015	53400-9
C-TF4-39-SW3-6.5	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/19/2005	SW8015	53400-10
C-TF4-39-SW3-2	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	1/20/2005	SW8015	53400-11

TABLE 6-21
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-B1	Soil	Acetone		0.052	7800	N	N	1/20/2005	SW8260B	605005	67-64-1
		Benzene	U	0.003	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.003	10	N	N				75-27-4
		Bromoform	U	0.003	81	N	N				75-25-2
		Bromomethane	U	0.003	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.003	1.5	N	N				56-23-5
		Chlorobenzene	U	0.003	210	N	N				108-90-7
		Chloroform	U	0.003	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.003	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.003	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.003	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.003	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.003	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.003	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.003	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.003	1.9	N	N				78-87-5
		Ethyl benzene	U	0.003	71	N	N				100-41-4
		Ethylene dibromide	U	0.003	0.01	N	N				
		Isopropyl benzene	U	0.003	27	N	N				98-82-8
		Methyl ethyl ketone		0.0074	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.003	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.003	390	N	N				1634-04-4
		Methylene chloride	U	0.003	45	N	N				75-09-2
		Styrene	U	0.003	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.003	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.003	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.003	12	N	N				127-18-4
		Toluene	U	0.003	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.003	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.003	3.6	N	N				79-00-5
		Trichloroethylene	U	0.003	13	N	N				79-01-6
		Vinyl chloride	U	0.003	0.02	N	N				75-01-4
		Xylenes (total)	U	0.003	110	N	N				1330-20-7

TABLE 6-21
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-B2	Soil	Acetone	B	0.0098	7800	N	N	1/20/2005	SW8260B	605003	67-64-1
		Benzene	U	0.0026	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0026	10	N	N				75-27-4
		Bromoform	U	0.0026	81	N	N				75-25-2
		Bromomethane	U	0.0026	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0026	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0026	210	N	N				108-90-7
		Chloroform	U	0.0026	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0026	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0026	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0026	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0026	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0026	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0026	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0026	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0026	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0026	71	N	N				100-41-4
		Ethylene dibromide	U	0.0026	0.01	N	N				
		Isopropyl benzene	U	0.0026	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0026	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0026	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0026	390	N	N				1634-04-4
		Methylene chloride	U	0.0026	45	N	N				75-09-2
		Styrene	U	0.0026	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0026	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0026	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0026	12	N	N				127-18-4
		Toluene	U	0.0026	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0026	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0026	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0026	13	N	N				79-01-6
		Vinyl chloride	U	0.0026	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0026	110	N	N				1330-20-7

TABLE 6-21
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-B2D	Soil	Acetone	B	0.014	7800	N	N	1/20/2005	SW8260B	605004	67-64-1
		Benzene	U	0.0037	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0037	10	N	N				75-27-4
		Bromoform	U	0.0037	81	N	N				75-25-2
		Bromomethane	U	0.0037	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0037	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0037	210	N	N				108-90-7
		Chloroform	U	0.0037	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0037	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0037	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0037	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0037	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0037	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0037	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0037	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0037	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0037	71	N	N				100-41-4
		Ethylene dibromide	U	0.0037	0.01	N	N				
		Isopropyl benzene	U	0.0037	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0037	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0037	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0037	390	N	N				1634-04-4
		Methylene chloride	U	0.0037	45	N	N				75-09-2
		Styrene	U	0.0037	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0037	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0037	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0037	12	N	N				127-18-4
		Toluene	U	0.0037	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0037	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0037	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0037	13	N	N				79-01-6
		Vinyl chloride	U	0.0037	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0037	110	N	N				1330-20-7

TABLE 6-21
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW1-2	Soil	Acetone		0.073	7800	N	N	1/20/2005	SW8260B	605009	67-64-1
		Benzene	U	0.0038	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0038	10	N	N				75-27-4
		Bromoform	U	0.0038	81	N	N				75-25-2
		Bromomethane	U	0.0038	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0038	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0038	210	N	N				108-90-7
		Chloroform	U	0.0038	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0038	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0038	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0038	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0038	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0038	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0038	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0038	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0038	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0038	71	N	N				100-41-4
		Ethylene dibromide	U	0.0038	0.01	N	N				
		Isopropyl benzene	U	0.0038	27	N	N				98-82-8
		Methyl ethyl ketone		0.0084	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0038	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0038	390	N	N				1634-04-4
		Methylene chloride	U	0.0038	45	N	N				75-09-2
		Styrene	U	0.0038	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0038	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0038	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0038	12	N	N				127-18-4
		Toluene	U	0.0038	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0038	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0038	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0038	13	N	N				79-01-6
		Vinyl chloride	U	0.0038	0.02	N	N				75-01-4
		Xylenes (total)			110	N	N				1330-20-7

TABLE 6-21
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW2-2	Soil	Acetone		0.022	7800	N	N	1/20/2005	SW8260B	605007	67-64-1
		Benzene	U	0.0026	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0026	10	N	N				75-27-4
		Bromoform	U	0.0026	81	N	N				75-25-2
		Bromomethane	U	0.0026	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0026	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0026	210	N	N				108-90-7
		Chloroform	U	0.0026	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0026	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0026	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0026	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0026	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0026	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0026	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0026	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0026	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0026	71	N	N				100-41-4
		Ethylene dibromide	U	0.0026	0.01	N	N				
		Isopropyl benzene	U	0.0026	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0026	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0026	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0026	390	N	N				1634-04-4
		Methylene chloride	U	0.0026	45	N	N				75-09-2
		Styrene	U	0.0026	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0026	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0026	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0026	12	N	N				127-18-4
		Toluene	U	0.0026	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0026	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0026	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0026	13	N	N				79-01-6
		Vinyl chloride	U	0.0026	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0026	110	N	N				1330-20-7

TABLE 6-21
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4039-SW3-2	Soil	Acetone		0.036	7800	N	N	1/20/2005	SW8260B	605011	67-64-1
		Benzene	U	0.0031	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0031	10	N	N				75-27-4
		Bromoform	U	0.0031	81	N	N				75-25-2
		Bromomethane	U	0.0031	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0031	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0031	210	N	N				108-90-7
		Chloroform	U	0.0031	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0031	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0031	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0031	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0031	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0031	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0031	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0031	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0031	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0031	71	N	N				100-41-4
		Ethylene dibromide	U	0.0031	0.01	N	N				
		Isopropyl benzene	U	0.0031	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0031	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0031	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0031	390	N	N				1634-04-4
		Methylene chloride	U	0.0031	45	N	N				75-09-2
		Styrene	U	0.0031	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0031	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0031	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0031	12	N	N				127-18-4
		Toluene	U	0.0031	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0031	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0031	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0031	13	N	N				79-01-6
		Vinyl chloride	U	0.0031	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0031	110	N	N				1330-20-7

TABLE 6-21
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW1-6.5	Soil	Acetone		0.027	7800	N	N	1/20/2005	SW8260B	605008	67-64-1
		Benzene	U	0.0027	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0027	10	N	N				75-27-4
		Bromoform	U	0.0027	81	N	N				75-25-2
		Bromomethane	U	0.0027	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0027	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0027	210	N	N				108-90-7
		Chloroform	U	0.0027	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0027	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0027	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0027	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0027	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0027	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0027	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0027	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0027	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0027	71	N	N				100-41-4
		Ethylene dibromide	U	0.0027	0.01	N	N				
		Isopropyl benzene	U	0.0027	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0027	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0027	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0027	390	N	N				1634-04-4
		Methylene chloride	U	0.0027	45	N	N				75-09-2
		Styrene	U	0.0027	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0027	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0027	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0027	12	N	N				127-18-4
		Toluene	U	0.0027	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0027	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0027	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0027	13	N	N				79-01-6
		Vinyl chloride	U	0.0027	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0027	110	N	N				1330-20-7

TABLE 6-21
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW2-6.5	Soil	Acetone	B	0.02	7800	N	N	1/20/2005	SW8260B	605006	67-64-1
		Benzene	U	0.0034	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0034	10	N	N				75-27-4
		Bromoform	U	0.0034	81	N	N				75-25-2
		Bromomethane	U	0.0034	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0034	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0034	210	N	N				108-90-7
		Chloroform	U	0.0034	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0034	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0034	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0034	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0034	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0034	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0034	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0034	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0034	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0034	71	N	N				100-41-4
		Ethylene dibromide	U	0.0034	0.01	N	N				
		Isopropyl benzene	U	0.0034	27	N	N				98-82-8
		Methyl ethyl ketone		0.0042	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0034	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0034	390	N	N				1634-04-4
		Methylene chloride	U	0.0034	45	N	N				75-09-2
		Styrene	U	0.0034	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0034	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0034	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0034	12	N	N				127-18-4
		Toluene	U	0.0034	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0034	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0034	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0034	13	N	N				79-01-6
		Vinyl chloride	U	0.0034	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0034	110	N	N				1330-20-7

TABLE 6-21
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW3-6.5	Soil	Acetone		0.035	7800	N	N	1/20/2005	SW8260B	605010	67-64-1
		Benzene	U	0.0024	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0024	10	N	N				75-27-4
		Bromoform	U	0.0024	81	N	N				75-25-2
		Bromomethane	U	0.0024	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0024	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0024	210	N	N				108-90-7
		Chloroform	U	0.0024	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0024	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0024	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0024	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0024	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0024	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0024	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0024	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0024	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0024	71	N	N				100-41-4
		Ethylene dibromide	U	0.0024	0.01	N	N				
		Isopropyl benzene	U	0.0024	27	N	N				98-82-8
		Methyl ethyl ketone		0.0037	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0024	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0024	390	N	N				1634-04-4
		Methylene chloride	U	0.0024	45	N	N				75-09-2
		Styrene	U	0.0024	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0024	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0024	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0024	12	N	N				127-18-4
		Toluene	U	0.0024	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0024	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0024	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0024	13	N	N				79-01-6
		Vinyl chloride	U	0.0024	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0024	110	N	N				1330-20-7

TABLE 6-22
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-B1	Soil	Acenaphthene	U	0.29	43	N	N	1/19/2005	SW8270C	53400-5	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-22
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-B2	Soil	Acenaphthene	U	0.29	43	N	N	1/19/2005	SW8270C	53400-3	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-22
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-B2-D	Soil	Acenaphthene	U	0.29	43	N	N	1/19/2005	SW8270C	53400-4	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
Naphthalene	U	0.29	54	N	N	91-20-3					
Pentachlorophenol	U	0.29	5.3	N	N	87-86-5					
Phenanthrene	U	0.29	40	N	N	85-01-8					
Phenol	U	0.29	6000	N	N	108-95-2					
Pyrene	U	0.29	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.29	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.29	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.29	58	N	N	88-06-2					

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Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW2-6.5	Soil	Acenaphthene	U	0.28	43	N	N	1/19/2005	SW8270C	53400-6	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
Naphthalene	U	0.28	54	N	N	91-20-3					
Pentachlorophenol	U	0.28	5.3	N	N	87-86-5					
Phenanthrene	U	0.28	40	N	N	85-01-8					
Phenol	U	0.28	6000	N	N	108-95-2					
Pyrene	U	0.28	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.28	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.28	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.28	58	N	N	88-06-2					

TABLE 6-22
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW2-2	Soil	Acenaphthene	U	0.3	43	N	N	1/19/2005	SW8270C	53400-7	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

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UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW1-6.5	Soil	Acenaphthene	U	0.29	43	N	N	1/19/2005	SW8270C	53400-8	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
Naphthalene	U	0.29	54	N	N	91-20-3					
Pentachlorophenol	U	0.29	5.3	N	N	87-86-5					
Phenanthrene	U	0.29	40	N	N	85-01-8					
Phenol	U	0.29	6000	N	N	108-95-2					
Pyrene	U	0.29	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.29	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.29	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.29	58	N	N	88-06-2					

TABLE 6-22
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW1-2	Soil	Acenaphthene	U	0.3	43	N	N	1/19/2005	SW8270C	53400-9	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 6-22
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UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW3-6.5	Soil	Acenaphthene	U	0.29	43	N	N	1/19/2005	SW8270C	53400-10	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
2-Methyl naphthalene	U	0.29	123	N	N	91-57-6					
Naphthalene	U	0.29	54	N	N	91-20-3					
Pentachlorophenol	U	0.29	5.3	N	N	87-86-5					
Phenanthrene	U	0.29	40	N	N	85-01-8					
Phenol	U	0.29	6000	N	N	108-95-2					
Pyrene	U	0.29	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.29	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.29	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.29	58	N	N	88-06-2					

TABLE 6-22
Tank Farm 4
UST 39 Pump Chamber Removal Action Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
C-TF4-39-SW3-2	Soil	Acenaphthene	U	0.28	43	N	N	1/19/2005	SW8070C	53400-11	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-23
Tank Farm 5 Shunt Piping
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF5-P-52-SP-1-8-10	Dry	12/30/04	1	34
TF5-P-52-SP-2-6-8	Dry	12/30/04	1	12
TF5-P-53-SP-1-9-11	Dry	12/30/04	1	10
TF5-P-53-SP-2-8-10	Dry	12/30/04	1	16
TF5-P-53-SP-3-7.5-9.5	Dry	12/30/04	1	4
TF5-P-53-SP-4-7.5-9.5	Dry	12/30/04	1	104
TF5-L-NS-49A-6.5-8.5	N/A	1/19/2005	1	107
TF5-L-NS-50-7.5-9.5	N/A	1/11/2005	1	904
TF5-P-NS-52-8.5-10.5	N/A	1/21/2005	1	255
TF5-P-NS-53-7.5-9.5	N/A	1/21/2005	1	208
TF5-P-NS-5-6-8	N/A	1/20/2005	1	1429
TF5-P-NS-56-3-5	N/A	1/20/2005	1	57
TF5-P-NS-59-7-9	N/A	1/20/2005	1	185

**TABLE 6-24
Tank Farm 5 Shunt Piping
TPH Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-53SP-4-7.5-9.5	Soil	Total Petroleum Hydrocarbons (TPH)		27	500	N	N	1/5/2005	EPA8015	53347-1	
TF5-L-NS-52-8.5-10.5	Soil	Total Petroleum Hydrocarbons (TPH)		155	500	N	N	2/2/2005	SW8015	53480-4	
TF5-L-NS-53-7.5-9.5	Soil	Total Petroleum Hydrocarbons (TPH)		94	500	N	N	2/2/2005	SW8015	53480-6	
TF5-L-NS-59-7-9	Soil	Total Petroleum Hydrocarbons (TPH)		115	500	N	N	2/2/2005	SW8015	53480-7	
TF5-L-NS-49A-6.5-8.5	Soil	Total Petroleum Hydrocarbons (TPH)		120	500	N	N	1/21/2005	SW8015	53421-1	
TF5-L-NS-50-7.5-9.5	Soil	Total Petroleum Hydrocarbons (TPH)		316	500	N	N	1/21/2005	SW8015	53421-2	
TF-L-NS-58-7-9	Soil	Total Petroleum Hydrocarbons (TPH)		193	500	N	N	1/21/2005	SW8015	53421-3	

TABLE 6-25
Tank Farm 5 Shunt Piping
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-49A-6.5-8.5	Soil	Acetone	B	0.0088	7800	N	N	1/26/2005	SW8260B	606067	67-64-1
		Benzene	U	0.0027	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0027	10	N	N				75-27-4
		Bromoform	U	0.0027	81	N	N				75-25-2
		Bromomethane	U	0.0027	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0027	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0027	210	N	N				108-90-7
		Chloroform	U	0.0027	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0027	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0027	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0027	920	N	N				75-34-4
		1,1-Dichloroethene	U	0.0027	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0027	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0027	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0027	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0027	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0027	71	N	N				100-41-4
		Ethylene dibromide	U	0.0027	0.01	N	N				
		Isopropyl benzene	U	0.0027	27	N	N				98-82-8
		Methyl ethyl ketone	J	0.0018	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0027	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0027	390	N	N				1634-04-4
		Methylene chloride	U	0.0027	45	N	N				75-09-2
		Styrene	U	0.0027	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0027	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0027	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0027	12	N	N				127-18-4
		Toluene	U	0.0027	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0027	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0027	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0027	13	N	N				79-01-6
		Vinyl chloride	U	0.0027	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0027	110	N	N				1330-20-7

TABLE 6-25
Tank Farm 5 Shunt Piping
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-50-7.5-9.5	Soil	Acetone	B	0.023	7800	N	N	1/25/2005	SW8260B	606068	67-64-1
		Benzene	J	0.00094	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0027	10	N	N				75-27-4
		Bromoform	U	0.0027	81	N	N				75-25-2
		Bromomethane	U	0.0027	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0027	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0027	210	N	N				108-90-7
		Chloroform	U	0.0027	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0027	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0027	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0027	920	N	N				75-34-4
		1,1-Dichloroethene	U	0.0027	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0027	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0027	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0027	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0027	1.9	N	N				78-87-5
		Ethyl benzene	J	0.00081	71	N	N				100-41-4
		Ethylene dibromide	U	0.0027	0.01	N	N				
		Isopropyl benzene		0.01	27	N	N				98-82-8
		Methyl ethyl ketone		0.0058	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0027	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0027	390	N	N				1634-04-4
		Methylene chloride	U	0.0027	45	N	N				75-09-2
		Styrene	U	0.0027	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0027	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0027	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0027	12	N	N				127-18-4
		Toluene	U	0.0027	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0027	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0027	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0027	13	N	N				79-01-6
		Vinyl chloride	U	0.0027	0.02	N	N				75-01-4
		Xylenes (total)		0.029	110	N	N				1330-20-7

TABLE 6-25
Tank Farm 5 Shunt Piping
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-58-7-9	Soil	Acetone	B	0.011	7800	N	N	1/26/2005	SW8260B	606069	67-64-1
		Benzene	U	0.0031	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0031	10	N	N				75-27-4
		Bromoform	U	0.0031	81	N	N				75-25-2
		Bromomethane	U	0.0031	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0031	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0031	210	N	N				108-90-7
		Chloroform	U	0.0031	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0031	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0031	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0031	920	N	N				75-34-4
		1,1-Dichloroethene	U	0.0031	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0031	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0031	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0031	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0031	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0031	71	N	N				100-41-4
		Ethylene dibromide	U	0.0031	0.01	N	N				
		Isopropyl benzene	U	0.0031	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0031	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0031	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0031	390	N	N				1634-04-4
		Methylene chloride	U	0.0031	45	N	N				75-09-2
		Styrene	U	0.0031	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0031	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0031	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0031	12	N	N				127-18-4
		Toluene	J	0.00066	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0031	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0031	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0031	13	N	N				79-01-6
		Vinyl chloride	U	0.0031	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0031	110	N	N				1330-20-7

TABLE 6-25
Tank Farm 5 Shunt Piping
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-52-8.5-10.5	Soil	Acetone	U	0.27	7800	N	N	2/4/2005	SW8260B	607014	67-64-1
		Benzene	U	0.27	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.27	10	N	N				75-27-4
		Bromoform	U	0.27	81	N	N				75-25-2
		Bromomethane	U	0.27	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.27	1.5	N	N				56-23-5
		Chlorobenzene	U	0.27	210	N	N				108-90-7
		Chloroform	U	0.27	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.27	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.27	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.27	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.27	0.2	Y	Y				75-35-4
		1,2-Dichloroethane	U	0.27	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.27	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.27	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.27	1.9	N	N				78-87-5
		Ethyl benzene	U	0.27	71	N	N				100-41-4
		Ethylene dibromide	U	0.27	0.01	Y	Y				
		Isopropyl benzene	U	0.27	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.27	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.27	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.27	390	N	N				1634-04-4
		Methylene chloride	U	0.27	45	N	N				75-09-2
		Styrene	U	0.27	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.27	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.27	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.27	12	N	N				127-18-4
		Toluene	U	0.27	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.27	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.27	3.6	N	N				79-00-5
		Trichloroethylene	U	0.27	13	N	N				79-01-6
		Vinyl chloride	U	0.27	0.02	Y	Y				75-01-4
		Xylenes (total)	U	0.27	110	N	N				1330-20-7

TABLE 6-25
Tank Farm 5 Shunt Piping
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-59-7-9	Soil	Acetone	B	0.025	7800	N	N	2/3/2005	SW8260B	607016	67-64-1
		Benzene	U	0.0031	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0031	10	N	N				75-27-4
		Bromoform	U	0.0031	81	N	N				75-25-2
		Bromomethane	U	0.0031	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0031	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0031	210	N	N				108-90-7
		Chloroform	U	0.0031	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0031	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0031	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0031	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0031	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0031	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0031	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0031	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0031	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0031	71	N	N				100-41-4
		Ethylene dibromide	U	0.0031	0.01	N	N				
		Isopropyl benzene	U	0.0031	27	N	N				98-82-8
		Methyl ethyl ketone	J	0.0028	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0031	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0031	390	N	N				1634-04-4
		Methylene chloride	U	0.0031	45	N	N				75-09-2
		Styrene	U	0.0031	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0031	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0031	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0031	12	N	N				127-18-4
		Toluene	U	0.0031	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0031	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0031	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0031	13	N	N				79-01-6
		Vinyl chloride	U	0.0031	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0031	110	N	N				1330-20-7

TABLE 6-26
Tank Farm 5 Shunt Piping
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-49A-6.5-8.5	Soil	Acenaphthene		1.16	43	N	N	1/26/2005	SW8270C	53421-1	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene		2.96	35	N	N				120-12-7
		Benzo(a)anthracene		3.65	0.9	Y	N				56-55-3
		Benzo(a)pyrene		3.25	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene		3.01	0.9	Y	N				205-99-2
		Benzo(g,h,i)perylene		1.55	0.8	Y	N				191-24-2
		Benzo(k)fluoranthene		1.83	0.9	Y	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene		3.54	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene		0.397	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene		10.1	20	N	N				206-44-0
		Fluorene		1.32	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene		1.86	0.9	Y	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	J	0.203	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene		10.3	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene		7.51	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-26
Tank Farm 5 Shunt Piping
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-50-7.5-9.5	Soil	Acenaphthene	U	0.28	43	N	N	1/26/2005	SW8270C	53421-2	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	J	0.187	35	N	N				120-12-7
		Benzo(a)anthracene	J	0.241	0.9	N	N				56-55-3
		Benzo(a)pyrene	J	0.226	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	J	0.19	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	J	0.153	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	J	0.247	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene		0.608	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene		0.646	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene		0.501	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-26
Tank Farm 5 Shunt Piping
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-58-7-9	Soil	Acenaphthene	U	0.31	43	N	N	1/25/2005	SW8270C	53421-3	83-32-9
		Acenaphthylene	U	0.31	23	N	N				208-96-8
		Anthracene	U	0.31	35	N	N				120-12-7
		Benzo(a)anthracene		0.341	0.9	N	N				56-55-3
		Benzo(a)pyrene	J	0.297	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	J	0.231	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	J	0.179	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	J	0.216	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.31	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.31	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.31	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.31	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.31	310	N	N				106-47-8
		2-Chlorophenol	U	0.31	50	N	N				95-57-8
		Chrysene		0.347	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.31	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.31	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		Diethyl phthalate	U	0.31	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.31	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.31	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.31	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.31	0.9	N	N				121-14-2
		Fluoranthene		0.738	20	N	N				206-44-0
		Fluorene	U	0.31	28	N	N				86-73-7
		Hexachlorobenzene	U	0.31	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.31	8.2	N	N				87-68-3
		Hexachloroethane	U	0.31	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	J	0.198	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.31	123	N	N				91-57-6
		Naphthalene	U	0.31	54	N	N				91-20-3
		Pentachlorophenol	U	0.31	5.3	N	N				87-86-5
		Phenanthrene		0.399	40	N	N				85-01-8
		Phenol	U	0.31	6000	N	N				108-95-2
		Pyrene		0.656	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.31	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.31	58	N	N				88-06-2

TABLE 6-26
Tank Farm 5 Shunt Piping
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-52-8.5-10.5	Soil	Acenaphthene	U	0.29	43	N	N	2/8/2005	SW8270C	53484-3	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	J	0.157	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	J	0.155	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene		0.424	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene		0.412	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene		0.331	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-26
Tank Farm 5 Shunt Piping
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-59-7-9	Soil	Acenaphthene	U	0.29	43	N	N	2/17/2005	SW8270C	53542-1	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	J	0.246	35	N	N				120-12-7
		Benzo(a)anthracene		0.466	0.9	N	N				56-55-3
		Benzo(a)pyrene		0.412	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene		0.339	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	J	0.289	0.8	N	N				191-24-2
		Benzo(k)fluoranthene		0.336	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene		0.465	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene		1.12	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene		0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene		0.862	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene		0.888	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-26
Tank Farm 5 Shunt Piping
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NS-59-7-9	Soil	Acenaphthene	U	0.29	43	N	N	2/17/2005	SW8270C	53542-1	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	J	0.246	35	N	N				120-12-7
		Benzo(a)anthracene		0.466	0.9	N	N				56-55-3
		Benzo(a)pyrene		0.412	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene		0.339	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	J	0.289	0.8	N	N				191-24-2
		Benzo(k)fluoranthene		0.336	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene		0.465	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene		1.12	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene		0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene		0.862	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene		0.888	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-27
Tank Farm 5 Exit Piping
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF5-P-24-1-3-5	Dry	12/15/04	1	34
TF5-P-24-2-3-5	Dry	12/15/04	1	7
TF5-P-24-3-3-5	Dry	12/15/04	1	9
TF5-P-24-4-3-5	Dry	12/15/04	1	20
TF5-P-24-5-3-5	Dry	12/15/04	1	10
TF5-P-24-6-3-5	Dry	12/15/04	1	3

TABLE 6-28
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW1	Soil	TPH		37	500	N	N	3/15/2005	EPA8015	53626-1	
TF5-L-CT53-SW1D	Soil	TPH	U	22	500	N	N	3/15/2005	EPA8015	53626-2	
TF5-L-CT53-SW2	Soil	TPH		45	500	N	N	3/15/2005	EPA8015	53626-3	
TF5-L-CT53-SW3	Soil	TPH		3730	500	Y	N	3/15/2005	EPA8015	53626-4	
TF5-L-CT53-SW4	Soil	TPH		212	500	N	N	3/15/2005	EPA8015	53626-5	
TF5-L-CT53-SW5	Soil	TPH		517	500	Y	N	3/15/2005	EPA8015	53626-6	
TF5-L-CT53-B1	Soil	TPH	U	22	500	N	N	3/15/2005	EPA8015	53626-7	
TF5-L-CT53-B2	Soil	TPH	U	22	500	N	N	3/15/2005	EPA8015	53626-8	
TF5-L-CT53-B3	Soil	TPH	U	22	500	N	N	3/15/2005	EPA8015	53626-9	
TF5-L-CT53-SW6	Soil	TPH	U	22	500	N	N	3/17/2005	EPA8015	53642-1	
TF5-L-CT53-SW7	Soil	TPH		4180	500	Y	N	3/18/2005	EPA8015	53642-2	
TF5-L-CT53-B4	Soil	TPH	U	22	500	N	N	3/17/2005	EPA8015	53642-3	
TF5-L-CT53-SW3A	Soil	TPH	U	36	500	N	N	3/29/2005	EPA8015	53716-1	
TF5-L-CT53-SW5A	Soil	TPH	U	22	500	N	N	3/29/2005	EPA8015	53716-3	
TF5-L-CT53-SW7A	Soil	TPH		156	500	N	N	3/29/2005	EPA8015	53716-2	

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW1	Soil	Acetone		0.034	7800	N	N	3/15/2005	SW8260B	610550	67-64-1
		Benzene	U	0.0025	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0025	10	N	N				75-27-4
		Bromoform	U	0.0025	81	N	N				75-25-2
		Bromomethane	U	0.0025	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0025	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0025	210	N	N				108-90-7
		Chloroform	U	0.0025	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0025	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0025	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0025	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0025	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0025	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0025	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0025	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0025	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0025	71	N	N				100-41-4
		Ethylene dibromide	U	0.0025	0.01	N	N				
		Isopropyl benzene	U	0.0025	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0025	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0025	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0025	390	N	N				1634-04-4
		Methylene chloride	U	0.0025	45	N	N				75-09-2
		Styrene	U	0.0025	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0025	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0025	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0025	12	N	N				127-18-4
		Toluene	U	0.0025	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0025	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0025	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0025	13	N	N				79-01-6
		Vinyl chloride	U	0.0025	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0025	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW1D	Soil	Acetone		0.046	7800	N	N	3/15/2005	SW8260B	610551	67-64-1
		Benzene	U	0.0032	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0032	10	N	N				75-27-4
		Bromoform	U	0.0032	81	N	N				75-25-2
		Bromomethane	U	0.0032	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0032	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0032	210	N	N				108-90-7
		Chloroform	U	0.0032	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0032	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0032	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0032	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0032	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0032	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0032	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0032	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0032	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0032	71	N	N				100-41-4
		Ethylene dibromide	U	0.0032	0.01	N	N				
		Isopropyl benzene	U	0.0032	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0032	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0032	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0032	390	N	N				1634-04-4
		Methylene chloride	U	0.0032	45	N	N				75-09-2
		Styrene	U	0.0032	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0032	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0032	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0032	12	N	N				127-18-4
		Toluene	U	0.0032	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0032	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0032	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0032	13	N	N				79-01-6
		Vinyl chloride	U	0.0032	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0032	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW2	Soil	Acetone		0.011	7800	N	N	3/15/2005	SW8260B	610552	67-64-1
		Benzene	U	0.003	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.003	10	N	N				75-27-4
		Bromoform	U	0.003	81	N	N				75-25-2
		Bromomethane	U	0.003	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.003	1.5	N	N				56-23-5
		Chlorobenzene	U	0.003	210	N	N				108-90-7
		Chloroform	U	0.003	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.003	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.003	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.003	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.003	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.003	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.003	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.003	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.003	1.9	N	N				78-87-5
		Ethyl benzene	U	0.003	71	N	N				100-41-4
		Ethylene dibromide	U	0.003	0.01	N	N				
		Isopropyl benzene	U	0.003	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.003	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.003	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.003	390	N	N				1634-04-4
		Methylene chloride	U	0.003	45	N	N				75-09-2
		Styrene	U	0.003	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.003	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.003	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.003	12	N	N				127-18-4
		Toluene	U	0.003	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.003	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.003	3.6	N	N				79-00-5
		Trichloroethylene	U	0.003	13	N	N				79-01-6
		Vinyl chloride	U	0.003	0.02	N	N				75-01-4
		Xylenes (total)	U	0.003	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW3	Soil	Acetone		0.052	7800	N	N	3/15/2005	SW8260B	610553	67-64-1
		Benzene	U	0.0031	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0031	10	N	N				75-27-4
		Bromoform	U	0.0031	81	N	N				75-25-2
		Bromomethane	U	0.0031	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0031	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0031	210	N	N				108-90-7
		Chloroform	U	0.0031	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0031	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0031	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0031	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0031	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0031	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0031	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0031	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0031	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0031	71	N	N				100-41-4
		Ethylene dibromide	U	0.0031	0.01	N	N				
		Isopropyl benzene	U	0.0031	27	N	N				98-82-8
		Methyl ethyl ketone		0.011	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0031	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0031	390	N	N				1634-04-4
		Methylene chloride	U	0.0031	45	N	N				75-09-2
		Styrene	U	0.0031	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0031	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0031	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0031	12	N	N				127-18-4
		Toluene	U	0.0031	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0031	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0031	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0031	13	N	N				79-01-6
		Vinyl chloride	U	0.0031	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0031	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW4	Soil	Acetone		0.038	7800	N	N	3/15/2005	SW8260B	610554	67-64-1
		Benzene	U	0.0025	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0025	10	N	N				75-27-4
		Bromoform	U	0.0025	81	N	N				75-25-2
		Bromomethane	U	0.0025	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0025	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0025	210	N	N				108-90-7
		Chloroform	U	0.0025	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0025	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0025	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0025	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0025	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0025	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0025	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0025	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0025	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0025	71	N	N				100-41-4
		Ethylene dibromide	U	0.0025	0.01	N	N				
		Isopropyl benzene	U	0.0025	27	N	N				98-82-8
		Methyl ethyl ketone		0.0038	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0025	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0025	390	N	N				1634-04-4
		Methylene chloride	U	0.0025	45	N	N				75-09-2
		Styrene	U	0.0025	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0025	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0025	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0025	12	N	N				127-18-4
		Toluene	U	0.0025	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0025	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0025	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0025	13	N	N				79-01-6
		Vinyl chloride	U	0.0025	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0025	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW5	Soil	Acetone		0.033	7800	N	N	3/15/2005	SW8260B	610555	67-64-1
		Benzene	U	0.0032	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0032	10	N	N				75-27-4
		Bromoform	U	0.0032	81	N	N				75-25-2
		Bromomethane	U	0.0032	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0032	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0032	210	N	N				108-90-7
		Chloroform	U	0.0032	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0032	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0032	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0032	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0032	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0032	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0032	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0032	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0032	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0032	71	N	N				100-41-4
		Ethylene dibromide	U	0.0032	0.01	N	N				
		Isopropyl benzene	U	0.0032	27	N	N				98-82-8
		Methyl ethyl ketone		0.0044	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0032	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0032	390	N	N				1634-04-4
		Methylene chloride	U	0.0032	45	N	N				75-09-2
		Styrene	U	0.0032	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0032	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0032	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0032	12	N	N				127-18-4
		Toluene	U	0.0032	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0032	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0032	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0032	13	N	N				79-01-6
		Vinyl chloride	U	0.0032	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0032	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B1	Soil	Acetone		0.014	7800	N	N	3/15/2005	SW8260B	610556	67-64-1
		Benzene	U	0.0031	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0031	10	N	N				75-27-4
		Bromoform	U	0.0031	81	N	N				75-25-2
		Bromomethane	U	0.0031	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0031	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0031	210	N	N				108-90-7
		Chloroform	U	0.0031	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0031	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0031	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0031	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0031	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0031	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0031	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0031	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0031	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0031	71	N	N				100-41-4
		Ethylene dibromide	U	0.0031	0.01	N	N				
		Isopropyl benzene	U	0.0031	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0031	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0031	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0031	390	N	N				1634-04-4
		Methylene chloride	U	0.0031	45	N	N				75-09-2
		Styrene	U	0.0031	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0031	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0031	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0031	12	N	N				127-18-4
		Toluene	U	0.0031	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0031	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0031	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0031	13	N	N				79-01-6
		Vinyl chloride	U	0.0031	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0031	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B2	Soil	Acetone		0.013	7800	N	N	3/15/2005	SW8260B	610557	67-64-1
		Benzene	U	0.0031	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0031	10	N	N				75-27-4
		Bromoform	U	0.0031	81	N	N				75-25-2
		Bromomethane	U	0.0031	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0031	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0031	210	N	N				108-90-7
		Chloroform	U	0.0031	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0031	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0031	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0031	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0031	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0031	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0031	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0031	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0031	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0031	71	N	N				100-41-4
		Ethylene dibromide	U	0.0031	0.01	N	N				
		Isopropyl benzene	U	0.0031	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0031	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0031	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0031	390	N	N				1634-04-4
		Methylene chloride	U	0.0031	45	N	N				75-09-2
		Styrene	U	0.0031	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0031	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0031	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0031	12	N	N				127-18-4
		Toluene	U	0.0031	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0031	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0031	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0031	13	N	N				79-01-6
		Vinyl chloride	U	0.0031	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0031	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B3	Soil	Acetone		0.033	7800	N	N	3/15/2005	SW8260B	610558	67-64-1
		Benzene	U	0.0029	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0029	10	N	N				75-27-4
		Bromoform	U	0.0029	81	N	N				75-25-2
		Bromomethane	U	0.0029	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0029	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0029	210	N	N				108-90-7
		Chloroform	U	0.0029	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0029	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0029	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0029	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0029	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0029	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0029	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0029	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0029	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0029	71	N	N				100-41-4
		Ethylene dibromide	U	0.0029	0.01	N	N				
		Isopropyl benzene	U	0.0029	27	N	N				98-82-8
		Methyl ethyl ketone		0.0038	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0029	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0029	390	N	N				1634-04-4
		Methylene chloride	U	0.0029	45	N	N				75-09-2
		Styrene	U	0.0029	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0029	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0029	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0029	12	N	N				127-18-4
		Toluene	U	0.0029	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0029	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0029	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0029	13	N	N				79-01-6
		Vinyl chloride	U	0.0029	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0029	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B4A	Soil	Acetone		0.0045	7800	N	N	3/21/2005	SW8260B	611341	67-64-1
		Benzene	U	0.0025	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0025	10	N	N				75-27-4
		Bromoform	U	0.0025	81	N	N				75-25-2
		Bromomethane	U	0.0025	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0025	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0025	210	N	N				108-90-7
		Chloroform	U	0.0025	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0025	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0025	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0025	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0025	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0025	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0025	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0025	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0025	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0025	71	N	N				100-41-4
		Ethylene dibromide	U	0.0025	0.01	N	N				
		Isopropyl benzene	U	0.0025	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0025	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0025	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0025	390	N	N				1634-04-4
		Methylene chloride	J	0.0011	45	N	N				75-09-2
		Styrene	U	0.0025	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0025	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0025	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0025	12	N	N				127-18-4
		Toluene	U	0.0025	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0025	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0025	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0025	13	N	N				79-01-6
		Vinyl chloride	U	0.0025	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0025	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW6	Soil	Acetone		0.016	7800	N	N	3/18/2005	SW8260B	611084	67-64-1
		Benzene	U	0.0032	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0032	10	N	N				75-27-4
		Bromoform	U	0.0032	81	N	N				75-25-2
		Bromomethane	U	0.0032	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0032	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0032	210	N	N				108-90-7
		Chloroform	U	0.0032	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0032	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0032	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0032	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0032	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0032	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0032	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0032	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0032	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0032	71	N	N				100-41-4
		Ethylene dibromide	U	0.0032	0.01	N	N				
		Isopropyl benzene	U	0.0032	27	N	N				98-82-8
		Methyl ethyl ketone	J	0.0016	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0032	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0032	390	N	N				1634-04-4
		Methylene chloride	U	0.0032	45	N	N				75-09-2
		Styrene	U	0.0032	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0032	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0032	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0032	12	N	N				127-18-4
		Toluene	U	0.0032	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0032	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0032	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0032	13	N	N				79-01-6
		Vinyl chloride	U	0.0032	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0032	110	N	N				1330-20-7

TABLE 6-29
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW7*	Soil	Acetone	U	0.34	7800	N	N	3/17/2005	SW8260B	611085	67-64-1
		Benzene	U	0.34	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.34	10	N	N				75-27-4
		Bromoform	U	0.34	81	N	N				75-25-2
		Bromomethane	U	0.34	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.34	1.5	N	N				56-23-5
		Chlorobenzene	U	0.34	210	N	N				108-90-7
		Chloroform	U	0.34	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.34	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.34	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.34	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.34	0.2	Y	Y				75-35-4
		1,2-Dichloroethane	U	0.34	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.34	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.34	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.34	1.9	N	N				78-87-5
		Ethyl benzene	U	0.34	71	N	N				100-41-4
		Ethylene dibromide	U	0.34	0.01	Y	Y				
		Isopropyl benzene	U	0.34	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.34	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.34	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.34	390	N	N				1634-04-4
		Methylene chloride	U	0.34	45	N	N				75-09-2
		Styrene	U	0.34	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.34	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.34	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.34	12	N	N				127-18-4
		Toluene	U	0.34	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.34	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.34	3.6	N	N				79-00-5
		Trichloroethylene	U	0.34	13	N	N				79-01-6
		Vinyl chloride	U	0.34	0.02	Y	Y				75-01-4
		Xylenes (total)	U	0.34	110	N	N				1330-20-7

Note:

* During pre-analysis screening, the lab found non-target volatile hydrocarbons at high concentrations in sample TF5-L-CT53-SW7. The TPH value of this sample is 4180 mg/kg. To prevent potential damage to the analytical instruments due to high-concentration contaminants, the sample was analyzed at a dilution, causing high reporting limits for the sample.

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW1	Soil	Acenaphthene	U	0.4	43	N	N	3/12/2005	SW8270	53626-1	83-32-9
		Acenaphthylene	U	0.4	23	N	N				208-96-8
		Anthracene	U	0.4	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.4	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.4	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.4	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.4	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.4	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.4	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.4	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.4	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.4	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.4	310	N	N				106-47-8
		2-Chlorophenol	U	0.4	50	N	N				95-57-8
		Chrysene	U	0.4	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.4	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.4	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.4	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.4	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.4	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.4	30	N	N				120-83-2
		Diethyl phthalate	U	0.4	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.4	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.4	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.4	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.4	0.9	N	N				121-14-2
		Fluoranthene	U	0.4	20	N	N				206-44-0
		Fluorene	U	0.4	28	N	N				86-73-7
		Hexachlorobenzene	U	0.4	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.4	8.2	N	N				87-68-3
		Hexachloroethane	U	0.4	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.4	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.4	123	N	N				91-57-6
		Naphthalene	U	0.4	54	N	N				91-20-3
		Pentachlorophenol	U	0.4	5.3	N	N				87-86-5
		Phenanthrene	U	0.4	40	N	N				85-01-8
		Phenol	U	0.4	6000	N	N				108-95-2
		Pyrene	U	0.4	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.4	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.4	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.4	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW1D	Soil	Acenaphthene	U	0.29	43	N	N	3/12/2005	SW8270	53626-2	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW2	Soil	Acenaphthene	U	0.28	43	N	N	3/12/2005	SW8270	53626-3	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW3	Soil	Acenaphthene	U	0.29	43	N	N	3/12/2005	SW8270	53626-4	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW4	Soil	Acenaphthene	U	0.3	43	N	N	3/12/2005	SW8270	53626-5	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

**TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW5	Soil	Acenaphthene		0.4	43	N	N	3/12/2005	SW8270	53626-6	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene		1.3	35	N	N				120-12-7
		Benzo(a)anthracene		2.4	0.9	Y	N				56-55-3
		Benzo(a)pyrene		1.62	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene		1.62	0.9	Y	N				205-99-2
		Benzo(g,h,i)perylene		0.362	0.8	N	N				191-24-2
		Benzo(k)fluoranthene		1.45	0.9	Y	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene		2.33	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene		0.149	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene		4.86	20	N	N				206-44-0
		Fluorene		0.424	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene		0.519	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene		3.94	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene		3.78	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B1	Soil	Acenaphthene	U	0.27	43	N	N	3/12/2005	SW8270	53626-7	83-32-9
		Acenaphthylene	U	0.27	23	N	N				208-96-8
		Anthracene	U	0.27	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.27	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.27	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.27	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.27	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.27	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.27	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.27	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.27	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.27	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.27	310	N	N				106-47-8
		2-Chlorophenol	U	0.27	50	N	N				95-57-8
		Chrysene	U	0.27	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.27	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.27	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.27	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.27	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.27	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.27	30	N	N				120-83-2
		Diethyl phthalate	U	0.27	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.27	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.27	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.27	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.27	0.9	N	N				121-14-2
		Fluoranthene	U	0.27	20	N	N				206-44-0
		Fluorene	U	0.27	28	N	N				86-73-7
		Hexachlorobenzene	U	0.27	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.27	8.2	N	N				87-68-3
		Hexachloroethane	U	0.27	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.27	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.27	123	N	N				91-57-6
		Naphthalene	U	0.27	54	N	N				91-20-3
		Pentachlorophenol	U	0.27	5.3	N	N				87-86-5
		Phenanthrene	U	0.27	40	N	N				85-01-8
		Phenol	U	0.27	6000	N	N				108-95-2
		Pyrene	U	0.27	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.27	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.27	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.27	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B2	Soil	Acenaphthene	U	0.28	43	N	N	3/12/2005	SW8270	53626-8	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B3	Soil	Acenaphthene	U	0.28	43	N	N	3/12/2005	SW8270	53626-9	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B4	Soil	Acenaphthene	U	0.28	43	N	N	3/19/2005	SW8270	53642-3	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW6	Soil	Acenaphthene	U	0.27	43	N	N	3/19/2005	SW8270	53642-1	83-32-9
		Acenaphthylene	U	0.27	23	N	N				208-96-8
		Anthracene	U	0.27	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.27	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.27	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.27	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.27	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.27	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.27	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.27	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.27	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.27	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.27	310	N	N				106-47-8
		2-Chlorophenol	U	0.27	50	N	N				95-57-8
		Chrysene	U	0.27	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.27	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.27	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.27	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.27	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.27	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.27	30	N	N				120-83-2
		Diethyl phthalate	U	0.27	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.27	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.27	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.27	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.27	0.9	N	N				121-14-2
		Fluoranthene	U	0.27	20	N	N				206-44-0
		Fluorene	U	0.27	28	N	N				86-73-7
		Hexachlorobenzene	U	0.27	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.27	8.2	N	N				87-68-3
		Hexachloroethane	U	0.27	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.27	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.27	123	N	N				91-57-6
		Naphthalene	U	0.27	54	N	N				91-20-3
		Pentachlorophenol	U	0.27	5.3	N	N				87-86-5
		Phenanthrene	U	0.27	40	N	N				85-01-8
		Phenol	U	0.27	6000	N	N				108-95-2
		Pyrene	U	0.27	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.27	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.27	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.27	58	N	N				88-06-2

**TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW7	Soil	Acenaphthene	U	0.28	43	N	N	3/19/2005	SW8270	53642-2	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW3A	Soil	Acenaphthene	U	0.31	43	N	N	4/1/2005	SW8270	53716-1	83-32-9
		Acenaphthylene	U	0.31	23	N	N				208-96-8
		Anthracene	U	0.31	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.31	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.31	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.31	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.31	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.31	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.31	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.31	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.31	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.31	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.31	310	N	N				106-47-8
		2-Chlorophenol	U	0.31	50	N	N				95-57-8
		Chrysene	U	0.31	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.31	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.31	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		Diethyl phthalate	U	0.31	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.31	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.31	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.31	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.31	0.9	N	N				121-14-2
		Fluoranthene	U	0.31	20	N	N				206-44-0
		Fluorene	U	0.31	28	N	N				86-73-7
		Hexachlorobenzene	U	0.31	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.31	8.2	N	N				87-68-3
		Hexachloroethane	U	0.31	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.31	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.31	123	N	N				91-57-6
		Naphthalene	U	0.31	54	N	N				91-20-3
		Pentachlorophenol	U	0.31	5.3	N	N				87-86-5
		Phenanthrene	U	0.31	40	N	N				85-01-8
		Phenol	U	0.31	6000	N	N				108-95-2
		Pyrene	U	0.31	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.31	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.31	58	N	N				88-06-2

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW5A	Soil	Acenaphthene	U	0.28	43	N	N	4/1/2005	SW8270	53716-3	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2
SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW7A	Soil	Acenaphthene	U	0.29	43	N	N	4/1/2005	SW8270	53716-2	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

TABLE 6-30
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.29	58	N	N				88-06-2

**TABLE 6-31
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample Metals Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW1	Soil	Antimony	B	0.89	10	N	N	3/11/2005		610550	7440-36-0
		Arsenic		13.4	7.0	Y	N				7440-38-2
		Barium	B	20.1	5500	N	N				7440-39-3
		Beryllium	B	0.36	0.4	N	N				7440-41-7
		Cadmium	B	0.19	39	N	N				7440-43-9
		Chromium		9.9	390	N	N				7440-47-3
		Copper		11.9	3100	N	N				7440-50-8
		Cyanide	U	0.55	200	N	N				57-12-5
		Lead		17.7	150	N	N				7439-92-1
		Manganese		287	390	N	N				7439-96-5
		Mercury	B	0.019	23	N	N				7439-97-6
		Nickel		16.6	1000	N	N				7440-02-0
		Selenium	U	0.56	390	N	N				7782-49-2
		Silver	U	0.16	200	N	N				7440-22-4
		Thallium	U	0.8	5.5	N	N				7440-28-0
		Vanadium		12.9	550	N	N				7440-62-2
		Zinc		36.6	6000	N	N				7440-66-6

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW1D	Soil	Antimony	B	0.72	10	N	N	3/11/2005		610551	7440-36-0
		Arsenic		12	7.0	Y	N				7440-38-2
		Barium		37.1	5500	N	N				7440-39-3
		Beryllium	B	0.41	0.4	Y	N				7440-41-7
		Cadmium	B	0.18	39	N	N				7440-43-9
		Chromium		10.9	390	N	N				7440-47-3
		Copper		26.9	3100	N	N				7440-50-8
		Cyanide	U	0.57	200	N	N				57-12-5
		Lead		16.4	150	N	N				7439-92-1
		Manganese		317	390	N	N				7439-96-5
		Mercury	U	0.016	23	N	N				7439-97-6
		Nickel		16.2	1000	N	N				7440-02-0
		Selenium	U	0.46	390	N	N				7782-49-2
		Silver	U	0.13	200	N	N				7440-22-4
		Thallium	U	0.66	5.5	N	N				7440-28-0
		Vanadium		15.9	550	N	N				7440-62-2
		Zinc		52	6000	N	N				7440-66-6

**TABLE 6-31
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample Metals Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW2	Soil	Antimony	B	0.83	10	N	N	3/11/2005		610552	7440-36-0
		Arsenic		16.8	7.0	Y	N				7440-38-2
		Barium	B	17.4	5500	N	N				7440-39-3
		Beryllium	B	0.43	0.4	Y	N				7440-41-7
		Cadmium	B	0.29	39	N	N				7440-43-9
		Chromium		12.9	390	N	N				7440-47-3
		Copper		19.7	3100	N	N				7440-50-8
		Cyanide	U	0.55	200	N	N				57-12-5
		Lead		9.8	150	N	N				7439-92-1
		Manganese		384	390	N	N				7439-96-5
		Mercury	U	0.015	23	N	N				7439-97-6
		Nickel		24.1	1000	N	N				7440-02-0
		Selenium	U	0.54	390	N	N				7782-49-2
		Silver	U	0.15	200	N	N				7440-22-4
		Thallium	U	0.77	5.5	N	N				7440-28-0
		Vanadium		18.2	550	N	N				7440-62-2
Zinc		55.7	6000	N	N	7440-66-6					

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW3	Soil	Antimony	B	0.7	10	N	N	3/11/2005		610553	7440-36-0
		Arsenic		11	7.0	Y	N				7440-38-2
		Barium	B	14.1	5500	N	N				7440-39-3
		Beryllium	B	0.34	0.4	N	N				7440-41-7
		Cadmium	B	0.16	39	N	N				7440-43-9
		Chromium		9.8	390	N	N				7440-47-3
		Copper		13.8	3100	N	N				7440-50-8
		Cyanide	U	0.57	200	N	N				57-12-5
		Lead		8.1	150	N	N				7439-92-1
		Manganese		134	390	N	N				7439-96-5
		Mercury	U	0.015	23	N	N				7439-97-6
		Nickel		16.6	1000	N	N				7440-02-0
		Selenium	U	0.49	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium	U	0.7	5.5	N	N				7440-28-0
		Vanadium		14.3	550	N	N				7440-62-2
Zinc		38.4	6000	N	N	7440-66-6					

**TABLE 6-31
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample Metals Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW4	Soil	Antimony	B	0.66	10	N	N	3/11/2005		610554	7440-36-0
		Arsenic		16.6	7.0	Y	N				7440-38-2
		Barium	B	17.9	5500	N	N				7440-39-3
		Beryllium	B	0.34	0.4	N	N				7440-41-7
		Cadmium	B	0.21	39	N	N				7440-43-9
		Chromium		9.8	390	N	N				7440-47-3
		Copper		14.7	3100	N	N				7440-50-8
		Cyanide	U	0.56	200	N	N				57-12-5
		Lead		17.5	150	N	N				7439-92-1
		Manganese		301	390	N	N				7439-96-5
		Mercury	U	0.018	23	N	N				7439-97-6
		Nickel		18.7	1000	N	N				7440-02-0
		Selenium	U	0.47	390	N	N				7782-49-2
		Silver	U	0.13	200	N	N				7440-22-4
		Thallium	U	0.67	5.5	N	N				7440-28-0
		Vanadium		12.7	550	N	N				7440-62-2
Zinc		47.8	6000	N	N	7440-66-6					

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW5	Soil	Antimony	B	0.76	10	N	N	3/11/2005		610555	7440-36-0
		Arsenic		14	7.0	Y	N				7440-38-2
		Barium	B	16.6	5500	N	N				7440-39-3
		Beryllium	B	0.33	0.4	N	N				7440-41-7
		Cadmium	B	0.29	39	N	N				7440-43-9
		Chromium		12.9	390	N	N				7440-47-3
		Copper		11.9	3100	N	N				7440-50-8
		Cyanide	U	0.6	200	N	N				57-12-5
		Lead		17.3	150	N	N				7439-92-1
		Manganese		320	390	N	N				7439-96-5
		Mercury	U	0.016	23	N	N				7439-97-6
		Nickel		19	1000	N	N				7440-02-0
		Selenium	U	0.49	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium	U	0.7	5.5	N	N				7440-28-0
		Vanadium		16	550	N	N				7440-62-2
Zinc		45	6000	N	N	7440-66-6					

**TABLE 6-31
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample Metals Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B1	Soil	Antimony	B	0.53	10	N	N	3/11/2005		610556	7440-36-0
		Arsenic		27.4	7.0	Y	N				7440-38-2
		Barium	B	11.7	5500	N	N				7440-39-3
		Beryllium	B	0.42	0.4	Y	N				7440-41-7
		Cadmium	B	0.4	39	N	N				7440-43-9
		Chromium		19.5	390	N	N				7440-47-3
		Copper		30.2	3100	N	N				7440-50-8
		Cyanide	U	0.56	200	N	N				57-12-5
		Lead		19.1	150	N	N				7439-92-1
		Manganese		860	390	Y	N				7439-96-5
		Mercury	U	0.015	23	N	N				7439-97-6
		Nickel		42.7	1000	N	N				7440-02-0
		Selenium	U	0.5	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium	U	0.72	5.5	N	N				7440-28-0
		Vanadium		18.5	550	N	N				7440-62-2
		Zinc		94.7	6000	N	N				7440-66-6

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B2	Soil	Antimony	B	0.82	10	N	N	3/12/2005		610557	7440-36-0
		Arsenic		16.7	7.0	Y	N				7440-38-2
		Barium	B	11.9	5500	N	N				7440-39-3
		Beryllium	B	0.33	0.4	N	N				7440-41-7
		Cadmium	B	0.22	39	N	N				7440-43-9
		Chromium		11.8	390	N	N				7440-47-3
		Copper		14.7	3100	N	N				7440-50-8
		Cyanide	U	0.57	200	N	N				57-12-5
		Lead		12.4	150	N	N				7439-92-1
		Manganese		363	390	N	N				7439-96-5
		Mercury	U	0.018	23	N	N				7439-97-6
		Nickel		24	1000	N	N				7440-02-0
		Selenium	U	0.48	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium	U	0.69	5.5	N	N				7440-28-0
		Vanadium		13.8	550	N	N				7440-62-2
		Zinc		52.8	6000	N	N				7440-66-6

**TABLE 6-31
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample Metals Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B3	Soil	Antimony	B	0.4	10	N	N	3/11/2005		610558	7440-36-0
		Arsenic		5.3	7.0	N	N				7440-38-2
		Barium	B	9.8	5500	N	N				7440-39-3
		Beryllium	B	0.2	0.4	N	N				7440-41-7
		Cadmium	B	0.11	39	N	N				7440-43-9
		Chromium		5.6	390	N	N				7440-47-3
		Copper		6.2	3100	N	N				7440-50-8
		Cyanide	U	0.57	200	N	N				57-12-5
		Lead		4	150	N	N				7439-92-1
		Manganese		169	390	N	N				7439-96-5
		Mercury	U	0.018	23	N	N				7439-97-6
		Nickel		8.4	1000	N	N				7440-02-0
		Selenium	U	0.49	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium	U	0.7	5.5	N	N				7440-28-0
		Vanadium		8.2	550	N	N				7440-62-2
Zinc		20.1	6000	N	N	7440-66-6					

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-B4	Soil	Antimony	B	0.73	10	N	N	3/16/2005		611086	7440-36-0
		Arsenic		17.4	7.0	Y	N				7440-38-2
		Barium	B	14.5	5500	N	N				7440-39-3
		Beryllium	B	0.17	0.4	N	N				7440-41-7
		Cadmium	U	0.063	39	N	N				7440-43-9
		Chromium		15	390	N	N				7440-47-3
		Copper		19.8	3100	N	N				7440-50-8
		Cyanide	U	0.57	200	N	N				57-12-5
		Lead		8	150	N	N				7439-92-1
		Manganese		466	390	Y	N				7439-96-5
		Mercury	U	0.019	23	N	N				7439-97-6
		Nickel		26.4	1000	N	N				7440-02-0
		Selenium	U	0.52	390	N	N				7782-49-2
		Silver	U	0.15	200	N	N				7440-22-4
		Thallium	U	0.74	5.5	N	N				7440-28-0
		Vanadium		14.9	550	N	N				7440-62-2
Zinc		58.6	6000	N	N	7440-66-6					

**TABLE 6-31
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample Metals Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW6	Soil	Antimony	B	0.68	10	N	N	3/16/2005		611084	7440-36-0
		Arsenic		10.4	7.0	Y	N				7440-38-2
		Barium	B	14.3	5500	N	N				7440-39-3
		Beryllium	B	0.13	0.4	N	N				7440-41-7
		Cadmium	U	0.056	39	N	N				7440-43-9
		Chromium		8.4	390	N	N				7440-47-3
		Copper		10.4	3100	N	N				7440-50-8
		Cyanide	U	0.53	200	N	N				57-12-5
		Lead		6	150	N	N				7439-92-1
		Manganese		251	390	N	N				7439-96-5
		Mercury	U	0.018	23	N	N				7439-97-6
		Nickel		15.8	1000	N	N				7440-02-0
		Selenium	U	0.46	390	N	N				7782-49-2
		Silver	U	0.13	200	N	N				7440-22-4
		Thallium	U	0.66	5.5	N	N				7440-28-0
		Vanadium		10.5	550	N	N				7440-62-2
		Zinc		33.2	6000	N	N				7440-66-6

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW7	Soil	Antimony	B	0.84	10	N	N	3/16/2005		611085	7440-36-0
		Arsenic		23.5	7.0	Y	N				7440-38-2
		Barium	B	11.2	5500	N	N				7440-39-3
		Beryllium	B	0.24	0.4	N	N				7440-41-7
		Cadmium	U	0.067	39	N	N				7440-43-9
		Chromium		17.3	390	N	N				7440-47-3
		Copper		27.3	3100	N	N				7440-50-8
		Cyanide	U	0.54	200	N	N				57-12-5
		Lead		9.4	150	N	N				7439-92-1
		Manganese		713	390	Y	N				7439-96-5
		Mercury	U	0.018	23	N	N				7439-97-6
		Nickel		38.4	1000	N	N				7440-02-0
		Selenium	U	0.54	390	N	N				7782-49-2
		Silver	U	0.16	200	N	N				7440-22-4
		Thallium	U	0.78	5.5	N	N				7440-28-0
		Vanadium		13.9	550	N	N				7440-62-2
		Zinc		91.8	6000	N	N				7440-66-6

**TABLE 6-31
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample Metals Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW3A	Soil	Antimony	B	0.5	10	N	N	3/29/2005		612312	7440-36-0
		Arsenic		4.9	7.0	N	N				7440-38-2
		Barium	B	13	5500	N	N				7440-39-3
		Beryllium	B	0.31	0.4	N	N				7440-41-7
		Cadmium	U	0.062	39	N	N				7440-43-9
		Chromium		7.5	390	N	N				7440-47-3
		Copper		7	3100	N	N				7440-50-8
		Cyanide	U	0.55	200	N	N				57-12-5
		Lead		4	150	N	N				7439-92-1
		Manganese		170	390	N	N				7439-96-5
		Mercury	U	0.017	23	N	N				7439-97-6
		Nickel		7.9	1000	N	N				7440-02-0
		Selenium	U	0.51	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium	B	0.85	5.5	N	N				7440-28-0
		Vanadium		15.6	550	N	N				7440-62-2
		Zinc		18.5	6000	N	N				7440-66-6

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW5A	Soil	Antimony	U	0.38	10	N	N	3/29/2005		612314	7440-36-0
		Arsenic		15.1	7.0	Y	N				7440-38-2
		Barium	B	16.7	5500	N	N				7440-39-3
		Beryllium	B	0.38	0.4	N	N				7440-41-7
		Cadmium	B	0.16	39	N	N				7440-43-9
		Chromium		10.6	390	N	N				7440-47-3
		Copper		19.5	3100	N	N				7440-50-8
		Cyanide	U	0.55	200	N	N				57-12-5
		Lead		7.3	150	N	N				7439-92-1
		Manganese		442	390	Y	N				7439-96-5
		Mercury	U	0.018	23	N	N				7439-97-6
		Nickel		23.9	1000	N	N				7440-02-0
		Selenium	U	0.48	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium	B	1	5.5	N	N				7440-28-0
		Vanadium		13	550	N	N				7440-62-2
		Zinc		52.3	6000	N	N				7440-66-6

**TABLE 6-31
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample Metals Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW7A	Soil	Antimony	B	0.49	10	N	N	3/29/2005		612313	7440-36-0
		Arsenic		13.3	7.0	Y	N				7440-38-2
		Barium	B	19.3	5500	N	N				7440-39-3
		Beryllium	B	0.36	0.4	N	N				7440-41-7
		Cadmium	B	0.082	39	N	N				7440-43-9
		Chromium		9.6	390	N	N				7440-47-3
		Copper		14.9	3100	N	N				7440-50-8
		Cyanide	U	0.51	200	N	N				57-12-5
		Lead		6.3	150	N	N				7439-92-1
		Manganese		151	390	N	N				7439-96-5
		Mercury	U	0.017	23	N	N				7439-97-6
		Nickel		18.6	1000	N	N				7440-02-0
		Selenium	U	0.52	390	N	N				7782-49-2
		Silver	U	0.15	200	N	N				7440-22-4
		Thallium	U	0.74	5.5	N	N				7440-28-0
		Vanadium		13.2	550	N	N				7440-62-2
		Zinc		38.7	6000	N	N				7440-66-6

TABLE 6-32
Tank Farm 5 CT-53 Chamber Removal Action
Confirmatory Sample PCB Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT53-SW1	Soil	Total PCBs	U	0.024	10	N	N	3/14/2005	EPA8082	53626-1	1336-36-3
TF5-L-CT53-SW1D	Soil	Total PCBs	U	0.017	10	N	N	3/14/2005	EPA8082	53626-2	1336-36-3
TF5-L-CT53-SW2	Soil	Total PCBs	U	0.017	10	N	N	3/14/2005	EPA8082	53626-3	1336-36-3
TF5-L-CT53-SW3	Soil	Total PCBs	U	0.017	10	N	N	3/14/2005	EPA8082	53626-4	1336-36-3
TF5-L-CT53-SW4	Soil	Total PCBs		0.026	10	N	N	3/14/2005	EPA8082	53626-5	1336-36-3
TF5-L-CT53-SW5	Soil	Total PCBs		0.142	10	N	N	3/14/2005	EPA8082	53626-6	1336-36-3
TF5-L-CT53-B1	Soil	Total PCBs	U	0.017	10	N	N	3/14/2005	EPA8082	53626-7	1336-36-3
TF5-L-CT53-B2	Soil	Total PCBs	U	0.017	10	N	N	3/14/2005	EPA8082	53626-8	1336-36-3
TF5-L-CT53-B3	Soil	Total PCBs	U	0.017	10	N	N	3/14/2005	EPA8082	53626-9	1336-36-3
TF5-L-CT53-SW6	Soil	Total PCBs	U	0.017	10	N	N	3/18/2005	EPA8082	53642-1	1336-36-3
TF5-L-CT53-SW7	Soil	Total PCBs	U	0.017	10	N	N	3/18/2005	EPA8082	53642-2	1336-36-3
TF5-L-CT53-B4	Soil	Total PCBs	U	0.017	10	N	N	3/18/2005	EPA8082	53642-3	1336-36-3
TF5-L-CT53-SW3A	Soil	Total PCBs	U	0.018	10	N	N	3/29/2005	EPA8082	53716-1	1336-36-3
TF5-L-CT53-SW5A	Soil	Total PCBs	U	0.017	10	N	N	3/29/2005	EPA8082	53716-3	1336-36-3
TF5-L-CT53-SW7A	Soil	Total PCBs	U	0.018	10	N	N	3/29/2005	EPA8082	53716-2	1336-36-3

TABLE 6-33
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-B1	Soil	TPH	U	22	500	N	N	3/17/2005	EPA8015	53645-1	
TF5-L-CT56-B2	Soil	TPH	U	22	500	N	N	3/17/2005	EPA8015	53645-2	
TF5-L-CT56-SW1	Soil	TPH	U	22	500	N	N	3/17/2005	EPA8015	53645-3	
TF5-L-CT56-SW2	Soil	TPH		51	500	N	N	3/17/2005	EPA8015	53645-4	
TF5-L-CT56-SW3	Soil	TPH	U	22	500	N	N	3/17/2005	EPA8015	53645-5	
TF5-L-CT56-SW4	Soil	TPH	U	22	500	N	N	3/17/2005	EPA8015	53645-6	

TABLE 6-34
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-B1	Soil	Acetone		0.013	7800	N	N	3/21/2005	SW8260B	611334	67-64-1
		Benzene	U	0.0031	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0031	10	N	N				75-27-4
		Bromoform	U	0.0031	81	N	N				75-25-2
		Bromomethane	U	0.0031	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0031	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0031	210	N	N				108-90-7
		Chloroform	U	0.0031	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0031	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0031	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0031	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0031	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0031	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0031	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0031	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0031	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0031	71	N	N				100-41-4
		Ethylene dibromide	U	0.0031	0.01	N	N				
		Isopropyl benzene	U	0.0031	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0031	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0031	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0031	390	N	N				1634-04-4
		Methylene chloride	J	0.0019	45	N	N				75-09-2
		Styrene	U	0.0031	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0031	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0031	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0031	12	N	N				127-18-4
		Toluene	U	0.0031	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0031	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0031	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0031	13	N	N				79-01-6
		Vinyl chloride	U	0.0031	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0031	110	N	N				1330-20-7

TABLE 6-34
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-B2	Soil	Acetone		0.013	7800	N	N	3/21/2005	SW8260B	611335	67-64-1
		Benzene	U	0.003	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.003	10	N	N				75-27-4
		Bromoform	U	0.003	81	N	N				75-25-2
		Bromomethane	U	0.003	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.003	1.5	N	N				56-23-5
		Chlorobenzene	U	0.003	210	N	N				108-90-7
		Chloroform	U	0.003	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.003	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.003	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.003	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.003	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.003	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.003	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.003	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.003	1.9	N	N				78-87-5
		Ethyl benzene	U	0.003	71	N	N				100-41-4
		Ethylene dibromide	U	0.003	0.01	N	N				
		Isopropyl benzene	U	0.003	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.003	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.003	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.003	390	N	N				1634-04-4
		Methylene chloride	J	0.0018	45	N	N				75-09-2
		Styrene	U	0.003	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.003	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.003	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.003	12	N	N				127-18-4
		Toluene	U	0.003	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.003	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.003	3.6	N	N				79-00-5
		Trichloroethylene	U	0.003	13	N	N				79-01-6
		Vinyl chloride	U	0.003	0.02	N	N				75-01-4
		Xylenes (total)	U	0.003	110	N	N				1330-20-7

TABLE 6-34
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW1	Soil	Acetone		0.016	7800	N	N	3/21/2005	SW8260B	611335	67-64-1
		Benzene	U	0.0029	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0029	10	N	N				75-27-4
		Bromoform	U	0.0029	81	N	N				75-25-2
		Bromomethane	U	0.0029	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0029	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0029	210	N	N				108-90-7
		Chloroform	U	0.0029	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0029	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0029	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0029	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0029	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0029	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0029	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0029	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0029	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0029	71	N	N				100-41-4
		Ethylene dibromide	U	0.0029	0.01	N	N				
		Isopropyl benzene	U	0.0029	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0029	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0029	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0029	390	N	N				1634-04-4
		Methylene chloride	J	0.0013	45	N	N				75-09-2
		Styrene	U	0.0029	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0029	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0029	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0029	12	N	N				127-18-4
		Toluene	U	0.0029	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0029	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0029	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0029	13	N	N				79-01-6
		Vinyl chloride	U	0.0029	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0029	110	N	N				1330-20-7

TABLE 6-34
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW2	Soil	Acetone		0.017	7800	N	N	3/21/2005	SW8260B	611337	67-64-1
		Benzene	U	0.0034	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0034	10	N	N				75-27-4
		Bromoform	U	0.0034	81	N	N				75-25-2
		Bromomethane	U	0.0034	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0034	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0034	210	N	N				108-90-7
		Chloroform	U	0.0034	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0034	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0034	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0034	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0034	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0034	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0034	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0034	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0034	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0034	71	N	N				100-41-4
		Ethylene dibromide	U	0.0034	0.01	N	N				
		Isopropyl benzene	U	0.0034	27	N	N				98-82-8
		Methyl ethyl ketone	U	0.0034	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0034	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0034	390	N	N				1634-04-4
		Methylene chloride	J	0.0013	45	N	N				75-09-2
		Styrene	U	0.0034	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0034	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0034	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0034	12	N	N				127-18-4
		Toluene	U	0.0034	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0034	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0034	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0034	13	N	N				79-01-6
		Vinyl chloride	U	0.0034	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0034	110	N	N				1330-20-7

TABLE 6-34
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW3	Soil	Acetone		0.06	7800	N	N	3/21/2005	SW8260B	611338	67-64-1
		Benzene	U	0.0026	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0026	10	N	N				75-27-4
		Bromoform	U	0.0026	81	N	N				75-25-2
		Bromomethane	U	0.0026	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0026	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0026	210	N	N				108-90-7
		Chloroform	U	0.0026	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0026	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0026	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0026	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0026	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0026	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0026	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0026	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0026	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0026	71	N	N				100-41-4
		Ethylene dibromide	U	0.0026	0.01	N	N				
		Isopropyl benzene	U	0.0026	27	N	N				98-82-8
		Methyl ethyl ketone		0.024	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0026	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0026	390	N	N				1634-04-4
		Methylene chloride	J	0.0011	45	N	N				75-09-2
		Styrene	U	0.0026	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0026	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0026	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0026	12	N	N				127-18-4
		Toluene	U	0.0026	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0026	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0026	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0026	13	N	N				79-01-6
		Vinyl chloride	U	0.0026	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0026	110	N	N				1330-20-7

TABLE 6-34
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW4	Soil	Acetone		0.02	7800	N	N	3/21/2005	SW8260B	611339	67-64-1
		Benzene	U	0.0026	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0026	10	N	N				75-27-4
		Bromoform	U	0.0026	81	N	N				75-25-2
		Bromomethane	U	0.0026	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0026	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0026	210	N	N				108-90-7
		Chloroform	U	0.0026	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0026	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0026	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0026	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0026	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0026	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0026	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0026	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0026	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0026	71	N	N				100-41-4
		Ethylene dibromide	U	0.0026	0.01	N	N				
		Isopropyl benzene	U	0.0026	27	N	N				98-82-8
		Methyl ethyl ketone		0.0027	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0026	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0026	390	N	N				1634-04-4
		Methylene chloride	J	0.0014	45	N	N				75-09-2
		Styrene	U	0.0026	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0026	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0026	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0026	12	N	N				127-18-4
		Toluene	U	0.0026	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0026	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0026	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0026	13	N	N				79-01-6
		Vinyl chloride	U	0.0026	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0026	110	N	N				1330-20-7

TABLE 6-35
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-B1	Soil	Acenaphthene	U	0.28	43	N	N	3/19/2005	SW8270	53645-1	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-35
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-B2	Soil	Acenaphthene	U	0.29	43	N	N	3/19/2005	SW8270	53645-2	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4

TABLE 6-35
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

		2,4,6- Trichlorophenol	U	0.29	58	N	N				88-06-2
SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW1	Soil	Acenaphthene	U	0.28	43	N	N	3/19/2005	SW8270	53645-3	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1

TABLE 6-35
Tank Farm 5 CT-56 Chamber Removal Action
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SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2
TF5-L-CT56-SW2	Soil	Acenaphthene	U	0.28	43	N	N	3/19/2005	SW8270	53645-4	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0

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		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW3	Soil	Acenaphthene	U	0.28	43	N	N	3/19/2005	SW8270	53645-5	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2

TABLE 6-35
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW4	Soil	Acenaphthene	U	0.28	43	N	N	3/19/2005	SW8270	53645-6	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8

TABLE 6-35
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample SVOC Analytical Data

		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 6-36
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-B1	Soil	Antimony	U	0.38	10	N	N	3/18/2005		611334	7440-36-0
		Arsenic	E	36.4	7.0	Y	N				7440-38-2
		Barium	B	18.4	5500	N	N				7440-39-3
		Beryllium	B	0.37	0.4	N	N				7440-41-7
		Cadmium	U	0.059	39	N	N				7440-43-9
		Chromium		11.6	390	N	N				7440-47-3
		Copper		23.7	3100	N	N				7440-50-8
		Cyanide	U	0.51	200	N	N				57-12-5
		Lead		8.3	150	N	N				7439-92-1
		Manganese		548	390	Y	N				7439-96-5
		Mercury	U	0.017	23	N	N				7439-97-6
		Nickel	E	28.6	1000	N	N				7440-02-0
		Selenium	U	0.48	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium	U	0.68	5.5	N	N				7440-28-0
		Vanadium		13.3	550	N	N				7440-62-2
		Zinc		59.9	6000	N	N				7440-66-6

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-B2	Soil	Antimony	U	0.37	10	N	N	3/18/2005		611335	7440-36-0
		Arsenic	E	48.2	7.0	Y	N				7440-38-2
		Barium	B	15.2	5500	N	N				7440-39-3
		Beryllium	B	0.38	0.4	N	N				7440-41-7
		Cadmium	U	0.057	39	N	N				7440-43-9
		Chromium		13.1	390	N	N				7440-47-3
		Copper		24	3100	N	N				7440-50-8
		Cyanide	U	0.52	200	N	N				57-12-5
		Lead		7.2	150	N	N				7439-92-1
		Manganese		442	390	Y	N				7439-96-5
		Mercury	U	0.015	23	N	N				7439-97-6
		Nickel	E	27.1	1000	N	N				7440-02-0
		Selenium	U	0.47	390	N	N				7782-49-2
		Silver	U	0.13	200	N	N				7440-22-4
		Thallium	U	0.66	5.5	N	N				7440-28-0
		Vanadium		14.1	550	N	N				7440-62-2
		Zinc		54.1	6000	N	N				7440-66-6

TABLE 6-36
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW1	Soil	Antimony	U	0.42	10	N	N	3/18/2005		611336	7440-36-0
		Arsenic	E	31.8	7.0	Y	N				7440-38-2
		Barium	B	15.7	5500	N	N				7440-39-3
		Beryllium	B	0.36	0.4	N	N				7440-41-7
		Cadmium	U	0.065	39	N	N				7440-43-9
		Chromium		12.1	390	N	N				7440-47-3
		Copper		21.4	3100	N	N				7440-50-8
		Cyanide	U	0.52	200	N	N				57-12-5
		Lead		10.6	150	N	N				7439-92-1
		Manganese		425	390	Y	N				7439-96-5
		Mercury	U	0.015	23	N	N				7439-97-6
		Nickel	E	27.1	1000	N	N				7440-02-0
		Selenium	U	0.53	390	N	N				7782-49-2
		Silver	U	0.15	200	N	N				7440-22-4
		Thallium	U	0.76	5.5	N	N				7440-28-0
		Vanadium		14	550	N	N				7440-62-2
		Zinc		56.7	6000	N	N				7440-66-6

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW2	Soil	Antimony	U	0.38	10	N	N	3/18/2005		611337	7440-36-0
		Arsenic	E	27.9	7.0	Y	N				7440-38-2
		Barium	B	16	5500	N	N				7440-39-3
		Beryllium	B	0.39	0.4	N	N				7440-41-7
		Cadmium	U	0.059	39	N	N				7440-43-9
		Chromium		14	390	N	N				7440-47-3
		Copper		23	3100	N	N				7440-50-8
		Cyanide	U	0.51	200	N	N				57-12-5
		Lead		10.4	150	N	N				7439-92-1
		Manganese		527	390	Y	N				7439-96-5
		Mercury	U	0.018	23	N	N				7439-97-6
		Nickel	E	24.9	1000	N	N				7440-02-0
		Selenium	U	0.48	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium	U	0.69	5.5	N	N				7440-28-0
		Vanadium		13	550	N	N				7440-62-2
		Zinc		79.6	6000	N	N				7440-66-6

TABLE 6-36
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW3	Soil	Antimony	U	0.37	10	N	N	3/18/2005		611338	7440-36-0
		Arsenic	E	21	7.0	Y	N				7440-38-2
		Barium	B	18.7	5500	N	N				7440-39-3
		Beryllium	B	0.31	0.4	N	N				7440-41-7
		Cadmium	U	0.057	39	N	N				7440-43-9
		Chromium		11.5	390	N	N				7440-47-3
		Copper		17.9	3100	N	N				7440-50-8
		Cyanide	U	0.57	200	N	N				57-12-5
		Lead		8.9	150	N	N				7439-92-1
		Manganese		382	390	N	N				7439-96-5
		Mercury	U	0.017	23	N	N				7439-97-6
		Nickel	E	23.7	1000	N	N				7440-02-0
		Selenium	U	0.47	390	N	N				7782-49-2
		Silver	U	0.13	200	N	N				7440-22-4
		Thallium	U	0.67	5.5	N	N				7440-28-0
		Vanadium		13.2	550	N	N				7440-62-2
		Zinc		48.2	6000	N	N				7440-66-6

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-SW4	Soil	Antimony	U	0.41	10	N	N	3/18/2005		611339	7440-36-0
		Arsenic	E	25.7	7.0	Y	N				7440-38-2
		Barium	B	16.7	5500	N	N				7440-39-3
		Beryllium	B	0.36	0.4	N	N				7440-41-7
		Cadmium	U	0.064	39	N	N				7440-43-9
		Chromium		11	390	N	N				7440-47-3
		Copper		18.4	3100	N	N				7440-50-8
		Cyanide	U	0.48	200	N	N				57-12-5
		Lead		9.9	150	N	N				7439-92-1
		Manganese		383	390	N	N				7439-96-5
		Mercury	U	0.017	23	N	N				7439-97-6
		Nickel	E	21.9	1000	N	N				7440-02-0
		Selenium	U	0.52	390	N	N				7782-49-2
		Silver	U	0.15	200	N	N				7440-22-4
		Thallium	U	0.74	5.5	N	N				7440-28-0
		Vanadium		13.3	550	N	N				7440-62-2
		Zinc		48.9	6000	N	N				7440-66-6

TABLE 6-37
Tank Farm 5 CT-56 Chamber Removal Action
Confirmatory Sample PCB Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-CT56-B1	Soil	Total PCBs	U	0.017	10	N	N	3/18/2005	EPA8082	53645-1	1336-36-3
TF5-L-CT56-B2	Soil	Total PCBs	U	0.018	10	N	N	3/18/2005	EPA8082	53645-2	1336-36-3
TF5-L-CT56-SW1	Soil	Total PCBs	U	0.017	10	N	N	3/18/2005	EPA8082	53645-3	1336-36-3
TF5-L-CT56-SW2	Soil	Total PCBs	U	0.017	10	N	N	3/18/2005	EPA8082	53645-4	1336-36-3
TF5-L-CT56-SW3	Soil	Total PCBs	U	0.017	10	N	N	3/18/2005	EPA8082	53645-5	1336-36-3
TF5-L-CT56-SW4	Soil	Total PCBs	U	0.017	10	N	N	3/18/2005	EPA8082	53645-6	1336-36-3

TABLE 6-38
Tank Farm 5 A-18 Chamber Removal Action
Confirmatory Sample TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-A18-SW1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	5/17/2005	SW8015	54113-1	
TF5-L-A18-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	5/17/2005	SW8015	54113-2	
TF5-L-A18-SW3	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	5/17/2005	SW8015	54113-3	
TF5-L-A18-SW4	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	5/17/2005	SW8015	54113-4	
TF5-L-A18-B1	Soil	Total Petroleum Hydrocarbons (TPH)		88	500	N	N	5/17/2005	SW8015	54113-5	
TF5-L-A18-VC4	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	5/17/2005	SW8015	54113-6	
TF5-L-A18-VC2	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	5/17/2005	SW8015	54113-7	
TF5-L-A18-VC3	Soil	Total Petroleum Hydrocarbons (TPH)		1200	500	Y	N	5/17/2005	SW8015	54113-8	

**TABLE 7-1
Tank Farm 4 Transformer Vaults
PCB Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-TV-1	Soil	Total PCBs	U	0.018	10	N	N	11/19/2004	EPA 8082	53052-5	
TF4-TV-2	Soil	Total PCBs	U	0.018	10	N	N	11/19/2004	EPA 8082	53052-6	
TF4-TV-3	Soil	Total PCBs	U	0.017	10	N	N	11/19/2004	EPA 8082	53052-7	
TF4-TV-4	Soil	Total PCBs	U	0.018	10	N	N	11/19/2004	EPA 8082	53052-8	
TF4-TV-4D	Soil	Total PCBs	U	0.017	10	N	N	11/19/2004	EPA 8082	53052-9	
TF4-TV-Chp	Soil	Total PCBs		4.3	10	N	N	1/5/2005	EPA 8082	53340-1	

TABLE 7-2
Tank Farm 4 Transformer Vaults
Chlorinated Benzene Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-TV-1	Soil	1,2-Dichlorobenzene	U	0.3	510	N	N	11/20/2004	SW8270	53052-5	95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-TV-2	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	11/20/2004	SW8270	53052-6	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-TV-3	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	11/20/2004	SW8270	53052-7	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-TV-4	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	11/20/2004	SW8270	53052-8	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

TABLE 7-2
Tank Farm 4 Transformer Vaults
Chlorinated Benzene Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-TV-4D	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	11/20/2004	SW8270	53052-9	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

**TABLE 7-3
Tank Farm 5 Transformer Vaults
PCB Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-TV-1	Soil	Total PCBs	U	0.017	10	N	N	11/19/2004	EPA 8082	53051-5	
TF5-TV-2	Soil	Total PCBs	U	0.018	10	N	N	11/19/2004	EPA 8082	53051-6	
TF5-TV-3	Soil	Total PCBs	U	0.017	10	N	N	11/19/2004	EPA 8082	53051-7	
TF5-TV-4	Soil	Total PCBs	U	0.017	10	N	N	11/19/2004	EPA 8082	53051-8	
TF5-TV-Chp	Soil	Total PCBs		0.32	10	N	N	1/4/2005	EPA 8082	53339-1	

TABLE 7-4
Tank Farm 5 Transformer Vaults
Chlorinated Benzene Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-TV-1	Soil	1,2-Dichlorobenzene	U	0.28	510	N	N	11/19/2004	SW8270	53051-5	95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-TV-2	Soil	1,2-Dichlorobenzene	U	0.31	510	N	N	11/19/2004	SW8270	53051-6	95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-TV-3	Soil	1,2-Dichlorobenzene	U	0.28	510	N	N	11/19/2004	SW8270	53051-7	95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-TV-4	Soil	1,2-Dichlorobenzene	U	0.28	510	N	N	11/19/2004	SW8270	53051-8	95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1

**TABLE 7-5
Tank Farm 4 Substation
Lead Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	Qualifier	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	RIDEM Industrial Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-Sub-1	Soil	Lead		11100	150	Y	N	N	12/1/2004	SW6010B	598955	7439-92-1
TF4-Sub-2	Soil	Lead		33000	150	Y	N	N	12/1/2004	SW6010B	598956	7439-92-1
TF4-Sub-3	Soil	Lead		148	150	N	N	N	12/1/2004	SW6010B	598957	7439-92-1
TF4-L-BATTERY1	Soil	Lead		54	150	500	N	N	3/17/2005	SW6010B	611091	7439-92-1
TF4-L-BATTERY2	Soil	Lead		30.7	150	500	N	N	3/17/2005	SW6010B	611092	7439-92-1
TF4-L-BATTERY3	Soil	Lead		14.7	150	500	N	N	3/17/2005	SW6010B	611093	7439-92-1
TF4-L-BATTERY4	Soil	Lead		48.9	150	500	N	N	3/17/2005	SW6010B	611094	7439-92-1
TF4-L-BATTERY5	Soil	Lead		40.3	150	500	N	N	3/17/2005	SW6010B	611095	7439-92-1
TF4-L-BATTERY6	Soil	Lead		12.4	150	500	N	N	3/17/2005	SW6010B	611096	7439-92-1
TF4-L-SUB-01	Soil	Lead	B	210	150	500	Y	N	1/11/2006	SW6010B	55662-11	7439-92-1
TF4-L-SUB-02	Soil	Lead	B	1000	150	500	Y	N	1/11/2006	SW6010B	55662-12	7439-92-1
TF4-L-SUB-03	Soil	Lead	B	45	150	500	N	N	1/11/2006	SW6010B	55662-13	7439-92-1
TF4-L-SUB-04	Soil	Lead	B	31	150	500	N	N	1/11/2006	SW6010B	55662-14	7439-92-1
TF4-L-SUB-05	Soil	Lead	B	140	150	500	N	N	1/10/2006	SW6010B	55662-15	7439-92-1
TF4-L-SUB-06	Soil	Lead	B	73	150	500	N	N	1/10/2006	SW6010B	55662-16	7439-92-1
TF4-L-SUB-07	Soil	Lead	B	390	150	500	Y	N	1/10/2006	SW6010B	55662-17	7439-92-1
TF4-L-SUB-08	Soil	Lead	B	660	150	500	Y	N	1/10/2006	SW6010B	55662-18	7439-92-1
TF4-L-SUB-09	Soil	Lead	B	290	150	500	Y	N	1/10/2006	SW6010B	55662-19	7439-92-1
TF4-L-SUB-10	Soil	Lead	B	190	150	500	Y	N	1/10/2006	SW6010B	55662-19	7439-92-1
TF4-C-SUB-11	Soil	Lead		9.6	150	500	N	N	1/26/2006	SW6010B	55782-1	7439-92-1
TF4-C-SUB-12	Soil	Lead		33	150	500	N	N	1/26/2006	SW6010B	55782-2	7439-92-1
TF4-C-SUB-13	Soil	Lead		19	150	500	N	N	1/26/2006	SW6010B	55782-3	7439-92-1
TF4-C-SUB-14	Soil	Lead		11	150	500	N	N	1/26/2006	SW6010B	55782-4	7439-92-1
TF4-C-SUB-14D	Soil	Lead		12	150	500	N	N	1/26/2006	SW6010B	55782-5	7439-92-1
TF4-C-SUB-15	Soil	Lead		60	150	500	N	N	1/26/2006	SW6010B	55782-6	7439-92-1
TF4-C-SUB-17	Soil	Lead		15	150	500	N	N	1/26/2006	SW6010B	55782-7	7439-92-1
TF4-C-SUB-16	Soil	Lead		13	150	500	N	N	1/26/2006	SW6010B	55782-8	7439-92-1
TF4-C-SUB-18	Soil	Lead	B	19	150	500	N	N	2/14/2006	SW6010B	680-13537-1	7439-92-1
TF4-C-SUB-19	Soil	Lead	B	13	150	500	N	N	2/14/2006	SW6010B	680-13537-2	7439-92-1
TF4-C-SUB-20	Soil	Lead	B	14	150	500	N	N	2/14/2006	SW6010B	680-13537-3	7439-92-1
TF4-C-SUB-21	Soil	Lead	B	16	150	500	N	N	2/14/2006	SW6010B	680-13537-4	7439-92-1
TF4-C-SUB-22	Soil	Lead	B	79	150	500	N	N	2/14/2006	SW6010B	680-13537-5	7439-92-1
TF4-C-SUB-23	Soil	Lead	B	31	150	500	N	N	2/14/2006	SW6010B	680-13537-6	7439-92-1
TF4-C-SUB-24	Soil	Lead	B	17	150	500	N	N	2/14/2006	SW6010B	680-13537-7	7439-92-1

B means that the compound was found in the blank and the sample
Method Blank MB 680-33140/13-A exhibited 0.36 ppm lead

**TABLE 7-6
Tank Farm 4 Substation
PCB Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-1	Soil	Total PCBs	U	0.018	10	N	N	11/19/2004	EPA 8082	53052-1	
TF4-SUB-1A	Soil	Total PCBs	U	0.018	10	N	N	1/4/2005	EPA 8082	53330-11	
TF4-SUB-2	Soil	Total PCBs	U	0.018	10	N	N	11/19/2004	EPA 8082	53052-2	
TF4-SUB-2A	Soil	Total PCBs	U	0.018	10	N	N	1/4/2005	EPA 8082	53330-12	
TF4-SUB-3	Soil	Total PCBs	U	0.017	10	N	N	11/19/2004	EPA 8082	53052-3	
TF4-SUB-3A	Soil	Total PCBs		0.031	10	N	N	1/4/2005	EPA 8082	53330-13	
TF4-SUB-4	Soil	Total PCBs	U	0.018	10	N	N	11/19/2004	EPA 8082	53052-4	
TF4-SUB-5	Soil	Total PCBs	J	0.015	10	N	N	1/4/2005	EPA 8082	53330-14	
TF4-SUB-6	Soil	Total PCBs	U	0.018	10	N	N	1/4/2005	EPA 8082	53330-15	
TF4-SUB-7	Soil	Total PCBs	U	0.017	10	N	N	1/4/2005	EPA 8082	53330-16	
TF4-SUB-Chp	Soil	Total PCBs	U	0.017	10	N	N	1/4/2005	EPA 8082	53340-2	
TF4-SUB-BLKMATERIAL	Soil	Total PCBs		0.0925	10	N	N	11/24/2004	EPA 8082	53084-2	

TABLE 7-7
Tank Farm 4 Substation
Chlorinated Benzene Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-1	Soil	1,2-Dichlorobenzene	U	0.3	510	N	N	11/20/2004	SW8270	53052-1	95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-1A	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	1/4/2005	SW8270	53330-11	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-2	Soil	1,2-Dichlorobenzene	U	0.31	510	N	N	11/20/2004	SW8270	53052-2	95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-2A	Soil	1,2-Dichlorobenzene	U	0.31	510	N	N	1/4/2005	SW8270	53330-12	95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1

TABLE 7-7
Tank Farm 4 Substation
Chlorinated Benzene Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-3	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	11/20/2004	SW8270	53052-3	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-3A	Soil	1,2-Dichlorobenzene	U	0.28	510	N	N	1/4/2005	SW8270	53330-13	95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-4	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	11/20/2004	SW8270	53052-4	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-5	Soil	1,2-Dichlorobenzene	U	0.27	510	N	N	1/4/2005	SW8270	53330-14	95-50-1
		1,3-Dichlorobenzene	U	0.27	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.27	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.27	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.27	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.27	96	N	N				120-82-1

TABLE 7-7
Tank Farm 4 Substation
Chlorinated Benzene Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-6	Soil	1,2-Dichlorobenzene	U	0.3	510	N	N	1/4/2005	SW8270	53330-15	95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-7	Soil	1,2-Dichlorobenzene	U	0.28	510	N	N	1/4/2005	SW8270	53330-16	95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-SUB-BLKMATERIAL	Soil	1,2-Dichlorobenzene	U	0.25	510	N	N	11/24/2004	SW8270	53084-2	95-50-1
		1,3-Dichlorobenzene	U	0.25	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.25	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.25	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.25	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.25	96	N	N				120-82-1

**TABLE 7-8
Tank Farm 5 Substation
Lead Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	Qualifier	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	RIDEM Industrial Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-BATTERY1	Soil	Lead		48.2	150	500	N	N	4/4/2005	SW6010B	612606	7439-92-1
TF5-L-BATTERY2	Soil	Lead		85.6	150	500	N	N	4/4/2005	SW6010B	612607	7439-92-1
TF5-L-BATTERY3	Soil	Lead		71.4	150	500	N	N	4/4/2005	SW6010B	612608	7439-92-1
TF5-L-BATTERY4	Soil	Lead		229	150	500	Y	N	4/4/2005	SW6010B	612609	7439-92-1
TF5-L-BATTERY5	Soil	Lead		204	150	500	Y	N	4/4/2005	SW6010B	612610	7439-92-1
TF5-L-BATTERY6	Soil	Lead		79.5	150	500	N	N	4/4/2005	SW6010B	612611	7439-92-1
TF5-L-SUB-01	Soil	Lead	B	10	150	500	N	N	1/16/2006	SW6010B	55681-1	7439-92-1
TF5-L-SUB-02	Soil	Lead	B	2200	150	500	Y	N	1/16/2006	SW6010B	55681-2	7439-92-1
TF5-L-SUB-03	Soil	Lead	B	300	150	500	Y	N	1/16/2006	SW6010B	55681-3	7439-92-1
TF5-L-SUB-04	Soil	Lead	B	210	150	500	Y	N	1/16/2006	SW6010B	55681-4	7439-92-1
TF5-L-SUB-05	Soil	Lead	B	630	150	500	Y	N	1/16/2006	SW6010B	55681-5	7439-92-1
TF5-L-SUB-06	Soil	Lead	B	97	150	500	N	N	1/16/2006	SW6010B	55681-6	7439-92-1
TF5-L-SUB-07	Soil	Lead	B	37	150	500	N	N	1/16/2006	SW6010B	55681-7	7439-92-1
TF5-L-SUB-08	Soil	Lead	B	160	150	500	Y	N	1/16/2006	SW6010B	55681-8	7439-92-1
TF5-L-SUB-09	Soil	Lead	B	280	150	500	Y	N	1/16/2006	SW6010B	55681-9	7439-92-1
TF5-L-SUB-10	Soil	Lead	B	83	150	500	N	N	1/16/2006	SW6010B	55681-10	7439-92-1
TF5-C-SUB-11	Soil	Lead		19	150	500	N	N	2/10/2006	SW6010B	55841-3	7439-92-1
TF5-C-SUB-12	Soil	Lead		67	150	500	N	N	2/10/2006	SW6010B	55841-4	7439-92-1
TF5-C-SUB-13	Soil	Lead		19	150	500	N	N	2/10/2006	SW6010B	55841-5	7439-92-1
TF5-C-SUB-14	Soil	Lead		32	150	500	N	N	2/10/2006	SW6010B	55841-6	7439-92-1
TF5-C-SUB-15	Soil	Lead		28	150	500	N	N	2/10/2006	SW6010B	55841-7	7439-92-1
TF5-C-SUB-16	Soil	Lead		22	150	500	N	N	2/10/2006	SW6010B	55841-8	7439-92-1
TF5-C-SUB-17	Soil	Lead		15	150	500	N	N	2/10/2006	SW6010B	55841-9	7439-92-1
TF5-C-SUB-18	Soil	Lead		9.3	150	500	N	N	2/10/2006	SW6010B	55841-10	7439-92-1
TF5-C-SUB-19	Soil	Lead		23	150	500	N	N	2/10/2006	SW6010B	55841-12	7439-92-1
TF5-C-SUB-20	Soil	Lead		46	150	500	N	N	2/10/2006	SW6010B	55841-13	7439-92-1
TF5-C-SUB-21	Soil	Lead		12	150	500	N	N	2/10/2006	SW6010B	55841-11	7439-92-1
TF5-C-SUB-22	Soil	Lead		30	150	500	N	N	2/10/2006	SW6010B	55841-14	7439-92-1
TF5-C-SUB-23	Soil	Lead		16	150	500	N	N	3/1/2006	SW6010B	55841-15	7439-92-1
TF5-C-SUB-24	Soil	Lead		13	150	500	N	N	3/1/2006	SW6010B	55909-7	7439-92-1
TF5-C-SUB-25	Soil	Lead		9.2	150	500	N	N	3/1/2006	SW6010B	55909-8	7439-92-1
TF5-C-SUB-26	Soil	Lead		37	150	500	N	N	3/1/2006	SW6010B	55909-9	7439-92-1

B means that the compound was found in the blank and the sample
Method Blank MB 680-33140/13-A exhibited 0.36 ppm lead

**TABLE 7-9
Tank Farm 5 Substation
PCB Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-1	Soil	Total PCBs	U	0.02	10	N	N	11/19/2004	EPA 8082	53051-1	
TF5-SUB-1A	Soil	Total PCBs	U	0.017	10	N	N	1/4/2005	EPA 8082	53329-5	
TF5-SUB-2	Soil	Total PCBs	U	0.017	10	N	N	11/19/2004	EPA 8082	53051-2	
TF5-SUB-2A	Soil	Total PCBs	U	0.018	10	N	N	1/4/2005	EPA 8082	53329-6	
TF5-SUB-3	Soil	Total PCBs	U	0.017	10	N	N	11/19/2004	EPA 8082	53051-3	
TF5-SUB-3A	Soil	Total PCBs	U	0.017	10	N	N	1/4/2005	EPA 8082	53329-7	
TF5-SUB-4	Soil	Total PCBs	U	0.018	10	N	N	11/19/2004	EPA 8082	53051-4	
TF5-SUB-5	Soil	Total PCBs	U	0.018	10	N	N	1/4/2005	EPA 8082	53329-8	
TF5-SUB-6	Soil	Total PCBs	U	0.017	10	N	N	1/4/2005	EPA 8082	53329-9	
TF5-SUB-7	Soil	Total PCBs	U	0.018	10	N	N	1/4/2005	EPA 8082	53329-10	
TF5-SUB-Chp	Soil	Total PCBs	U	0.015	10	N	N	1/4/2005	EPA 8082	53339-2	

TABLE 7-10
Tank Farm 5 Substation
Chlorinated Benzene Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-1	Soil	1,2-Dichlorobenzene	U	0.31	510	N	N	11/19/2004	SW8270	53051-1	95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-1A	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	1/3/2005	SW8270	53329-5	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-2	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	11/19/2004	SW8270	53051-2	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-2A	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	1/3/2005	SW8270	53329-6	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

TABLE 7-10
Tank Farm 5 Substation
Chlorinated Benzene Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-3	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	11/19/2004	SW8270	53051-3	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-3A	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	1/3/2005	SW8270	53329-7	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-4	Soil	1,2-Dichlorobenzene	U	0.3	510	N	N	11/19/2004	SW8270	53051-4	95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-5	Soil	1,2-Dichlorobenzene	U	0.28	510	N	N	1/3/2005	SW8270	53329-8	95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1

TABLE 7-10
Tank Farm 5 Substation
Chlorinated Benzene Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-6	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	1/3/2005	SW8270	53329-9	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-SUB-7	Soil	1,2-Dichlorobenzene	U	0.29	510	N	N	1/3/2005	SW8270	53329-10	95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1

TABLE 7-11
Tank Farm 4 Ruin 1 Demolition
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-SW1	Soil	Total Petroleum Hydrocarbons (TPH)	U	26	500	N	N	12/16/2004	SW8015	53271-1	
L-TF4-R1-SW2	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	12/16/2004	SW8015	53271-2	
L-TF4-R1-SW3	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	12/16/2004	SW8015	53271-3	
L-TF4-R1-SW4	Soil	Total Petroleum Hydrocarbons (TPH)		50	500	N	N	12/16/2004	SW8015	53271-4	
L-TF4-R1-SW5	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	12/16/2004	SW8015	53271-5	
L-TF4-R1-SW6	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	12/16/2004	SW8015	53271-6	
L-TF4-R1-SW7	Soil	Total Petroleum Hydrocarbons (TPH)		51	500	N	N	12/16/2004	SW8015	53271-7	
L-TF4-R1-SW8	Soil	Total Petroleum Hydrocarbons (TPH)	U	26	500	N	N	12/16/2004	SW8015	53271-8	
L-TF4-R1-SW9	Soil	Total Petroleum Hydrocarbons (TPH)		33	500	N	N	12/16/2004	SW8015	53271-9	
L-TF4-R1-SW10	Soil	Total Petroleum Hydrocarbons (TPH)		65	500	N	N	12/16/2004	SW8015	53271-10	
L-TF4-R1-SW11	Soil	Total Petroleum Hydrocarbons (TPH)		76	500	N	N	12/16/2004	SW8015	53271-11	
L-TF4-R1-SW12	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	12/17/2004	SW8015	53271-12	
L-TF4-R1-SW13	Soil	Total Petroleum Hydrocarbons (TPH)		199	500	N	N	12/17/2004	SW8015	53271-13	
L-TF4-R1-SW14	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	12/17/2004	SW8015	53271-14	
L-TF4-R1-SW15	Soil	Total Petroleum Hydrocarbons (TPH)		29	500	N	N	12/17/2004	SW8015	53271-15	
L-TF4-R1-SW16	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	12/17/2004	SW8015	53271-16	
L-TF4-R1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		266	500	N	N	12/17/2004	SW8015	53281-1	
L-TF4-R1-B1D	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	12/17/2004	SW8015	53281-2	
L-TF4-R1-B2	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	12/17/2004	SW8015	53281-3	
L-TF4-R1-B3	Soil	Total Petroleum Hydrocarbons (TPH)		68	500	N	N	12/17/2004	SW8015	53281-4	
L-TF4-R1-B4	Soil	Total Petroleum Hydrocarbons (TPH)		145	500	N	N	12/22/2004	SW8015	53301-1	
L-TF4-R1-B5	Soil	Total Petroleum Hydrocarbons (TPH)		45	500	N	N	12/22/2004	SW8015	53301-2	
L-TF4-R1-B6	Soil	Total Petroleum Hydrocarbons (TPH)		42	500	N	N	12/22/2004	SW8015	53301-3	
L-TF4-R1-B7	Soil	Total Petroleum Hydrocarbons (TPH)		32	500	N	N	12/22/2004	SW8015	53301-4	
L-TF4-R1-B8	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	12/22/2004	SW8015	53301-5	
L-TF4-R1-B9	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	12/22/2004	SW8015	53301-6	

TABLE 7-12
Tank Farm 4 Ruin 1 Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-SW13	Soil	Acenaphthene	U	0.31	43	N	N	12/21/2004	SW8270	53288-1	83-32-9
		Acenaphthylene	U	0.31	23	N	N				208-96-8
		Anthracene	U	0.31	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.31	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.31	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.31	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.31	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.31	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.31	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.31	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.31	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.31	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.31	310	N	N				106-47-8
		2-Chlorophenol	U	0.31	50	N	N				95-57-8
		Chrysene	U	0.31	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.31	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.31	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		Diethyl phthalate	U	0.31	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.31	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.31	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.31	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.31	0.9	N	N				121-14-2
		Fluoranthene	U	0.31	20	N	N				206-44-0
		Fluorene	U	0.31	28	N	N				86-73-7
		Hexachlorobenzene	U	0.31	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.31	8.2	N	N				87-68-3
		Hexachloroethane	U	0.31	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.31	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.31	123	N	N				91-57-6
		Naphthalene	U	0.31	54	N	N				91-20-3
		Pentachlorophenol	U	0.31	5.3	N	N				87-86-5
		Phenanthrene	U	0.31	40	N	N				85-01-8
		Phenol	U	0.31	6000	N	N				108-95-2
		Pyrene	U	0.31	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.31	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.31	58	N	N				88-06-2

TABLE 7-12
Tank Farm 4 Ruin 1 Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-B4	Soil	Acenaphthene	U	0.28	43	N	N	12/29/2004	SW8270	53316-1	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	U	0.28	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 7-12
Tank Farm 4 Ruin 1 Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-B1	Soil	Acenaphthene	U	0.29	43	N	N	12/30/2004	SW8270	53323-1	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 7-13
Tank Farm 4 Ruin 1 Demolition
Dioxins/Furans Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-B4	Soil	1,2,3,4,6,7,8-HpCDD		25					1/7/2005		53316-1	35822-46-9
		1,2,3,4,6,7,8-HpCDF	U	0.22								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	0.15								55673-89-7
		1,2,3,4,7,8-HxCDD	U	0.21								39227-28-6
		1,2,3,4,7,8-HxCDF	U	0.23								70648-26-9
		1,2,3,6,7,8-HxCDD	U	0.17								57653-85-7
		1,2,3,6,7,8-HxCDF	U	0.22								57117-44-9
		1,2,3,7,8,9-HxCDD	U	0.35								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.27								72918-21-9
		1,2,3,7,8-PeCDD	U	0.31								40321-76-4
		1,2,3,7,8-PeCDF	U	0.17								57117-41-6
		2,3,4,6,7,8-HxCDF	U	0.24								60851-34-5
		2,3,4,7,8-PeCDF	U	0.17								57117-31-4
		2,3,7,8-TCDD	U	0.13								1746-01-6
		2,3,7,8-TCDF	U	0.14								51207-31-9
		OCDD		2700								3268-87-9
		OCDF	U	0.74								39001-02-0
		Total HpCDDs		53								37871-00-4
		Total HpCDFs	U	0.22								38998-75-3
		Total HxCDDs	U	1.1								34465-46-8
		Total HxCDFs	U	0.27								55684-94-1
		Total PeCDDs	U	0.31								36088-22-9
		Total PeCDFs	U	0.18								30402-15-4
		Total TCDDs	U	0.13								41903-57-5
		Total TCDFs	U	0.35								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		3.2	3.9	N						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-13
Tank Farm 4 Ruin 1 Demolition
Dioxins/Furans Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-B1	Soil	1,2,3,4,6,7,8-HpCDD		110					1/7/2005		53323-1	35822-46-9
		1,2,3,4,6,7,8-HpCDF	U	0.79								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	0.17								55673-89-7
		1,2,3,4,7,8-HxCDD	U	0.69								39227-28-6
		1,2,3,4,7,8-HxCDF	U	0.25								70648-26-9
		1,2,3,6,7,8-HxCDD	U	1.2								57653-85-7
		1,2,3,6,7,8-HxCDF	U	0.24								57117-44-9
		1,2,3,7,8,9-HxCDD	U	1.5								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.28								72918-21-9
		1,2,3,7,8-PeCDD	U	0.42								40321-76-4
		1,2,3,7,8-PeCDF	U	0.24								57117-41-6
		2,3,4,6,7,8-HxCDF	U	0.27								60851-34-5
		2,3,4,7,8-PeCDF	U	0.24								57117-31-4
		2,3,7,8-TCDD	U	0.21								1746-01-6
		2,3,7,8-TCDF	U	0.22								51207-31-9
		OCDD	E	11000								3268-87-9
		OCDF	U	2.3								39001-02-0
		Total HpCDDs		230								37871-00-4
		Total HpCDFs	U	0.79								38998-75-3
		Total HxCDDs		9.2								34465-46-8
		Total HxCDFs	U	0.28								55684-94-1
		Total PeCDDs	U	0.57								36088-22-9
		Total PeCDFs	U	0.35								30402-15-4
		Total TCDDs	U	0.21								41903-57-5
		Total TCDFs	U	0.22								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		12.6	3.9	Y						

Note:
* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-14
Tank Farm 4
Ruin 1 Excavated Backfill TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP1-A1	Soil	Total Petroleum Hydrocarbons (TPH)		63	500	N	N	2/2/2005	SW8015	53479-1	
TF4-L-RUIN1-SP1-A2	Soil	Total Petroleum Hydrocarbons (TPH)		67	500	N	N	2/2/2005	SW8015	53479-2	
TF4-L-RUIN1-SP1-A3	Soil	Total Petroleum Hydrocarbons (TPH)		81	500	N	N	2/2/2005	SW8015	53479-3	
TF4-L-RUIN1-SP1-B1	Soil	Total Petroleum Hydrocarbons (TPH)		66	500	N	N	2/2/2005	SW8015	53479-4	
TF4-L-RUIN1-SP1-B2	Soil	Total Petroleum Hydrocarbons (TPH)		77	500	N	N	2/3/2005	SW8015	53479-5	
TF4-L-RUIN1-SP1-B3	Soil	Total Petroleum Hydrocarbons (TPH)		62	500	N	N	2/3/2005	SW8015	53479-6	
TF4-L-RUIN1-SP1-C1	Soil	Total Petroleum Hydrocarbons (TPH)		130	500	N	N	2/3/2005	SW8015	53479-7	
TF4-L-RUIN1-SP1-C2	Soil	Total Petroleum Hydrocarbons (TPH)		54	500	N	N	2/3/2005	SW8015	53479-8	
TF4-L-RUIN1-SP1-C3	Soil	Total Petroleum Hydrocarbons (TPH)		120	500	N	N	2/3/2005	SW8015	53479-9	
TF4-L-RUIN1-SP2-A1	Soil	Total Petroleum Hydrocarbons (TPH)		51	500	N	N	2/3/2005	SW8015	53479-10	
TF4-L-RUIN1-SP2-A2	Soil	Total Petroleum Hydrocarbons (TPH)		73	500	N	N	2/3/2005	SW8015	53479-11	
TF4-L-RUIN1-SP2-A3	Soil	Total Petroleum Hydrocarbons (TPH)		49	500	N	N	2/3/2005	SW8015	53479-12	
TF4-L-RUIN1-SP2-B1	Soil	Total Petroleum Hydrocarbons (TPH)		107	500	N	N	2/3/2005	SW8015	53479-13	
TF4-L-RUIN1-SP2-B2	Soil	Total Petroleum Hydrocarbons (TPH)		55	500	N	N	2/3/2005	SW8015	53479-14	
TF4-L-RUIN1-SP2-B3	Soil	Total Petroleum Hydrocarbons (TPH)		128	500	N	N	2/4/2005	SW8015	53479-15RX	
TF4-L-RUIN1-SP2-C1	Soil	Total Petroleum Hydrocarbons (TPH)		86	500	N	N	2/3/2005	SW8015	53479-16	
TF4-L-RUIN1-SP2-C2	Soil	Total Petroleum Hydrocarbons (TPH)		112	500	N	N	2/3/2005	SW8015	53479-17	
TF4-L-RUIN1-SP2-C2D	Soil	Total Petroleum Hydrocarbons (TPH)		114	500	N	N	2/3/2005	SW8015	53479-18	
TF4-L-RUIN1-SP2-C3	Soil	Total Petroleum Hydrocarbons (TPH)		107	500	N	N	2/3/2005	SW8015	53479-19	
TF4-L-RUIN1-SP2-D1	Soil	Total Petroleum Hydrocarbons (TPH)		60	500	N	N	2/3/2005	SW8015	53479-20	
TF4-L-RUIN1-SP2-D2	Soil	Total Petroleum Hydrocarbons (TPH)		79	500	N	N	2/3/2005	SW8015	53479-21	
TF4-L-RUIN1-SP2-D3	Soil	Total Petroleum Hydrocarbons (TPH)		119	500	N	N	2/3/2005	SW8015	53479-22	
TF4-L-RUIN1-SP2-E1	Soil	Total Petroleum Hydrocarbons (TPH)		48	500	N	N	2/3/2005	SW8015	53479-23	
TF4-L-RUIN1-SP2-E1D	Soil	Total Petroleum Hydrocarbons (TPH)		47	500	N	N	2/3/2005	SW8015	53479-24	
TF4-L-RUIN1-SP2-E2	Soil	Total Petroleum Hydrocarbons (TPH)		99	500	N	N	2/3/2005	SW8015	53479-25	
TF4-L-RUIN1-SP2-E3	Soil	Total Petroleum Hydrocarbons (TPH)		55	500	N	N	2/3/2005	SW8015	53479-26	

TABLE 7-15
Tank Farm 4
Ruin 1 Excavated Backfill SVOC Analytical Data

SAMP_ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP1-C1	Soil	Acenaphthene	U	0.3	43	N	N	2/9/2005	SW8270C	53504-1	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N	193-39-5					
2-Methyl naphthalene	U	0.3	123	N	N	91-57-6					
Naphthalene	U	0.3	54	N	N	91-20-3					
Pentachlorophenol	U	0.3	5.3	N	N	87-86-5					
Phenanthrene	U	0.3	40	N	N	85-01-8					
Phenol	U	0.3	6000	N	N	108-95-2					
Pyrene	U	0.3	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.3	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.3	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.3	58	N	N	88-06-2					

TABLE 7-15
Tank Farm 4
Ruin 1 Excavated Backfill SVOC Analytical Data

SAMP_ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP1-C3	Soil	Acenaphthene	U	0.29	43	N	N	2/9/2005	SW8270C	53504-2	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
2-Methyl naphthalene	U	0.29	123	N	N	91-57-6					
Naphthalene	U	0.29	54	N	N	91-20-3					
Pentachlorophenol	U	0.29	5.3	N	N	87-86-5					
Phenanthrene	U	0.29	40	N	N	85-01-8					
Phenol	U	0.29	6000	N	N	108-95-2					
Pyrene	U	0.29	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.29	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.29	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.29	58	N	N	88-06-2					

TABLE 7-15
Tank Farm 4
Ruin 1 Excavated Backfill SVOC Analytical Data

SAMP_ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-B1	Soil	Acenaphthene	U	0.29	43	N	N	2/9/2005	SW8270C	53504-3	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 7-15
Tank Farm 4
Ruin 1 Excavated Backfill SVOC Analytical Data

SAMP_ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-C2	Soil	Acenaphthene	U	0.29	43	N	N	2/9/2005	SW8270C	53504-4	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
2-Methyl naphthalene	U	0.29	123	N	N	91-57-6					
Naphthalene	U	0.29	54	N	N	91-20-3					
Pentachlorophenol	U	0.29	5.3	N	N	87-86-5					
Phenanthrene	U	0.29	40	N	N	85-01-8					
Phenol	U	0.29	6000	N	N	108-95-2					
Pyrene	U	0.29	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.29	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.29	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.29	58	N	N	88-06-2					

TABLE 7-15
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Ruin 1 Excavated Backfill SVOC Analytical Data

SAMP_ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-C2D	Soil	Acenaphthene	U	0.29	43	N	N	2/9/2005	SW8270C	53504-5	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N	193-39-5					
2-Methyl naphthalene	U	0.29	123	N	N	91-57-6					
Naphthalene	U	0.29	54	N	N	91-20-3					
Pentachlorophenol	U	0.29	5.3	N	N	87-86-5					
Phenanthrene	U	0.29	40	N	N	85-01-8					
Phenol	U	0.29	6000	N	N	108-95-2					
Pyrene	U	0.29	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.29	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.29	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.29	58	N	N	88-06-2					

TABLE 7-15
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Ruin 1 Excavated Backfill SVOC Analytical Data

SAMP_ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-C3	Soil	Acenaphthene	U	0.29	43	N	N	2/9/2005	SW8270C	53504-6	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
2-Methyl naphthalene	U	0.29	123	N	N	91-57-6					
Naphthalene	U	0.29	54	N	N	91-20-3					
Pentachlorophenol	U	0.29	5.3	N	N	87-86-5					
Phenanthrene	U	0.29	40	N	N	85-01-8					
Phenol	U	0.29	6000	N	N	108-95-2					
Pyrene	U	0.29	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.29	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.29	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.29	58	N	N	88-06-2					

TABLE 7-15
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Ruin 1 Excavated Backfill SVOC Analytical Data

SAMP_ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-D3	Soil	Acenaphthene	U	0.29	43	N	N	2/9/2005	SW8270C	53504-7	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
2-Methyl naphthalene	U	0.29	123	N	N	91-57-6					
Naphthalene	U	0.29	54	N	N	91-20-3					
Pentachlorophenol	U	0.29	5.3	N	N	87-86-5					
Phenanthrene	U	0.29	40	N	N	85-01-8					
Phenol	U	0.29	6000	N	N	108-95-2					
Pyrene	U	0.29	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.29	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.29	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.29	58	N	N	88-06-2					

TABLE 7-15
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Ruin 1 Excavated Backfill SVOC Analytical Data

SAMP_ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-B3	Soil	Acenaphthene	U	0.28	43	N	N	2/10/2005	SW8270C	53504-8	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	U	0.28	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
Naphthalene	U	0.28	54	N	N	91-20-3					
Pentachlorophenol	U	0.28	5.3	N	N	87-86-5					
Phenanthrene	U	0.28	40	N	N	85-01-8					
Phenol	U	0.28	6000	N	N	108-95-2					
Pyrene	U	0.28	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.28	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.28	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.28	58	N	N	88-06-2					

TABLE 7-16
Tank Farm 4
Ruin 1 Excavated Backfill Dioxin/Furan Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-B1	Soil	1,2,3,4,6,7,8-HpCDD		49						SW8290		35822-46-9
		1,2,3,4,6,7,8-HpCDF	U	1.3								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	0.42								55673-89-7
		1,2,3,4,7,8-HxCDD	U	0.4								39227-28-6
		1,2,3,4,7,8-HxCDF	U	0.37								70648-26-9
		1,2,3,6,7,8-HxCDD	U	0.5								57653-85-7
		1,2,3,6,7,8-HxCDF	U	0.44								57117-44-9
		1,2,3,7,8,9-HxCDD	U	0.88								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.44								72918-21-9
		1,2,3,7,8-PeCDD	U	0.46								40321-76-4
		1,2,3,7,8-PeCDF	U	0.22								57117-41-6
		2,3,4,6,7,8-HxCDF	U	0.56								60851-34-5
		2,3,4,7,8-PeCDF	U	0.21								57117-31-4
		2,3,7,8-TCDD	U	0.14								1746-01-6
		2,3,7,8-TCDF	U	0.25								51207-31-9
		OCDD	E	5100								3268-87-9
		OCDF	U	0.23								39001-02-0
		Total HpCDDs		100								37871-00-4
		Total HpCDFs	U	1.4								38998-75-3
		Total HxCDDs	U	2.5								34465-46-8
		Total HxCDFs	U	0.56								55684-94-1
		Total PeCDDs	U	0.54								36088-22-9
		Total PeCDFs	U	0.22								30402-15-4
		Total TCDDs	U	0.14								41903-57-5
		Total TCDFs	U	0.25								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		6.0	3.9	Y						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-16
Tank Farm 4
Ruin 1 Excavated Backfill Dioxin/Furan Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-C2	Soil	1,2,3,4,6,7,8-HpCDD		83						SW8290		35822-46-9
		1,2,3,4,6,7,8-HpCDF	U	2								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	0.41								55673-89-7
		1,2,3,4,7,8-HxCDD	U	0.45								39227-28-6
		1,2,3,4,7,8-HxCDF	U	0.39								70648-26-9
		1,2,3,6,7,8-HxCDD	U	0.73								57653-85-7
		1,2,3,6,7,8-HxCDF	U	0.62								57117-44-9
		1,2,3,7,8,9-HxCDD	U	1.3								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.46								72918-21-9
		1,2,3,7,8-PeCDD	U	0.36								40321-76-4
		1,2,3,7,8-PeCDF	U	0.25								57117-41-6
		2,3,4,6,7,8-HxCDF	U	0.41								60851-34-5
		2,3,4,7,8-PeCDF	U	0.23								57117-31-4
		2,3,7,8-TCDD	U	0.16								1746-01-6
		2,3,7,8-TCDF	U	0.34								51207-31-9
		OCDD	E	5700								3268-87-9
		OCDF	U	0.26								39001-02-0
		Total HpCDDs		160								37871-00-4
		Total HpCDFs	U	2.9								38998-75-3
		Total HxCDDs	U	3.1								34465-46-8
		Total HxCDFs	U	0.62								55684-94-1
		Total PeCDDs	U	0.86								36088-22-9
		Total PeCDFs	U	0.25								30402-15-4
		Total TCDDs	U	0.16								41903-57-5
		Total TCDFs	U	0.34								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		7.0	3.9	Y						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-16
Tank Farm 4
Ruin 1 Excavated Backfill Dioxin/Furan Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-C2-D	Soil	1,2,3,4,6,7,8-HpCDD		110						SW8290		35822-46-9
		1,2,3,4,6,7,8-HpCDF	J	3.3								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	0.87								55673-89-7
		1,2,3,4,7,8-HxCDD	U	0.87								39227-28-6
		1,2,3,4,7,8-HxCDF	U	1								70648-26-9
		1,2,3,6,7,8-HxCDD	U	0.93								57653-85-7
		1,2,3,6,7,8-HxCDF	U	1								57117-44-9
		1,2,3,7,8,9-HxCDD	U	2.8								19408-74-3
		1,2,3,7,8,9-HxCDF	U	1.2								72918-21-9
		1,2,3,7,8-PeCDD	U	0.72								40321-76-4
		1,2,3,7,8-PeCDF	U	0.33								57117-41-6
		2,3,4,6,7,8-HxCDF	U	1.1								60851-34-5
		2,3,4,7,8-PeCDF	U	0.34								57117-31-4
		2,3,7,8-TCDD	U	0.22								1746-01-6
		2,3,7,8-TCDF	U	0.36								51207-31-9
		OCDD	E	8500								3268-87-9
		OCDF	U	0.32								39001-02-0
		Total HpCDDs		210								37871-00-4
		Total HpCDFs		8.8								38998-75-3
		Total HxCDDs		3.2								34465-46-8
		Total HxCDFs		1.1								55684-94-1
		Total PeCDDs	U	0.95								36088-22-9
		Total PeCDFs	U	0.34								30402-15-4
		Total TCDDs	U	0.22								41903-57-5
		Total TCDFs	U	0.36								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		10.5	3.9	Y						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-16
Tank Farm 4
Ruin 1 Excavated Backfill Dioxin/Furan Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-C3	Soil	1,2,3,4,6,7,8-HpCDD		62						SW8290		35822-46-9
		1,2,3,4,6,7,8-HpCDF	U	1.9								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	0.32								55673-89-7
		1,2,3,4,7,8-HxCDD	U	0.38								39227-28-6
		1,2,3,4,7,8-HxCDF	U	0.35								70648-26-9
		1,2,3,6,7,8-HxCDD	U	0.61								57653-85-7
		1,2,3,6,7,8-HxCDF	U	0.53								57117-44-9
		1,2,3,7,8,9-HxCDD	U	1.1								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.35								72918-21-9
		1,2,3,7,8-PeCDD	U	0.34								40321-76-4
		1,2,3,7,8-PeCDF	U	0.2								57117-41-6
		2,3,4,6,7,8-HxCDF	U	0.31								60851-34-5
		2,3,4,7,8-PeCDF	U	0.21								57117-31-4
		2,3,7,8-TCDD	U	0.17								1746-01-6
		2,3,7,8-TCDF	U	0.29								51207-31-9
		OCDD	E	5000								3268-87-9
		OCDF	U	0.21								39001-02-0
		Total HpCDDs		130								37871-00-4
		Total HpCDFs	U	2.6								38998-75-3
		Total HxCDDs	U	2.5								34465-46-8
		Total HxCDFs	U	0.53								55684-94-1
		Total PeCDDs	U	0.72								36088-22-9
		Total PeCDFs	U	0.21								30402-15-4
		Total TCDDs	U	0.17								41903-57-5
		Total TCDFs	U	0.29								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		6.1	3.9	Y						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-16
Tank Farm 4
Ruin 1 Excavated Backfill Dioxin/Furan Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-D3	Soil	1,2,3,4,6,7,8-HpCDD		77						SW8290		35822-46-9
		1,2,3,4,6,7,8-HpCDF	U	1.4								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	0.71								55673-89-7
		1,2,3,4,7,8-HxCDD	U	0.54								39227-28-6
		1,2,3,4,7,8-HxCDF	U	0.57								70648-26-9
		1,2,3,6,7,8-HxCDD	U	0.53								57653-85-7
		1,2,3,6,7,8-HxCDF	U	0.75								57117-44-9
		1,2,3,7,8,9-HxCDD	U	1.4								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.68								72918-21-9
		1,2,3,7,8-PeCDD	U	0.46								40321-76-4
		1,2,3,7,8-PeCDF	U	0.26								57117-41-6
		2,3,4,6,7,8-HxCDF	U	0.6								60851-34-5
		2,3,4,7,8-PeCDF	U	0.25								57117-31-4
		2,3,7,8-TCDD	U	0.15								1746-01-6
		2,3,7,8-TCDF	U	0.23								51207-31-9
		OCDD	E	5400								3268-87-9
		OCDF	U	0.22								39001-02-0
		Total HpCDDs		140								37871-00-4
		Total HpCDFs	U	2.4								38998-75-3
		Total HxCDDs	U	2.3								34465-46-8
		Total HxCDFs	U	0.75								55684-94-1
		Total PeCDDs	U	0.81								36088-22-9
		Total PeCDFs	U	0.26								30402-15-4
		Total TCDDs	U	0.15								41903-57-5
		Total TCDFs	U	0.23								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		6.7	3.9	Y						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-16
Tank Farm 4
Ruin 1 Excavated Backfill Dioxin/Furan Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-RUIN1-SP2-B3	Soil	1,2,3,4,6,7,8-HpCDD		51						SW8290		35822-46-9
		1,2,3,4,6,7,8-HpCDF	U	0.26								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	1.9								55673-89-7
		1,2,3,4,7,8-HxCDD	U	0.47								39227-28-6
		1,2,3,4,7,8-HxCDF	U	0.34								70648-26-9
		1,2,3,6,7,8-HxCDD	U	0.55								57653-85-7
		1,2,3,6,7,8-HxCDF	U	0.35								57117-44-9
		1,2,3,7,8,9-HxCDD	U	0.72								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.26								72918-21-9
		1,2,3,7,8-PeCDD	U	0.29								40321-76-4
		1,2,3,7,8-PeCDF	U	0.18								57117-41-6
		2,3,4,6,7,8-HxCDF	U	0.25								60851-34-5
		2,3,4,7,8-PeCDF	U	0.18								57117-31-4
		2,3,7,8-TCDD	U	0.14								1746-01-6
		2,3,7,8-TCDF	U	0.31								51207-31-9
		OCDD	E	4800								3268-87-9
		OCDF	U	0.26								39001-02-0
		Total HpCDDs		110								37871-00-4
		Total HpCDFs	U	1.9								38998-75-3
		Total HxCDDs		3.1								34465-46-8
		Total HxCDFs	U	0.48								55684-94-1
		Total PeCDDs	U	0.29								36088-22-9
		Total PeCDFs	U	0.18								30402-15-4
		Total TCDDs	U	0.14								41903-57-5
		Total TCDFs	U	0.31								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		5.7	3.9	Y						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-17
Tank Farm 4 Ruin 2 Demolition
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-R2-SW5	Soil	TPH	U	22	500	N	N	3/24/2005	EPA8015	53692-1	
TF4-L-R2-SW6	Soil	TPH	U	24	500	N	N	3/24/2005	EPA8015	53692-2	
TF4-L-R2-SW7	Soil	TPH	U	22	500	N	N	3/24/2005	EPA8015	53692-3	
TF4-L-R2-SW8	Soil	TPH		28	500	N	N	3/24/2005	EPA8015	53692-4	
TF4-L-R2-SW9	Soil	TPH	U	24	500	N	N	3/24/2005	EPA8015	53692-5	
TF4-L-R2-SW10	Soil	TPH		155	500	N	N	3/24/2005	EPA8015	53692-6	
TF4-L-R2-SW11	Soil	TPH	U	22	500	N	N	3/24/2005	EPA8015	53692-7	
TF4-L-R2-SW12	Soil	TPH	U	22	500	N	N	3/24/2005	EPA8015	53692-8	
TF4-L-R2-SW13	Soil	TPH	U	22	500	N	N	3/24/2005	EPA8015	53692-9	
TF4-L-R2-SW14	Soil	TPH	U	22	500	N	N	3/24/2005	EPA8015	53692-10	
TF4-L-R2-SW15	Soil	TPH	U	22	500	N	N	3/24/2005	EPA8015	53692-11	
TF4-L-R2-SW15D	Soil	TPH	U	22	500	N	N	3/24/2005	EPA8015	53692-12	
TF4-L-R2-B1	Soil	TPH	U	34	500	N	N	3/24/2005	EPA8015	53692-13	
TF4-L-R2-B2	Soil	TPH		110	500	N	N	3/24/2005	EPA8015	53692-14	
TF4-L-R2-B3	Soil	TPH	U	32	500	N	N	3/24/2005	EPA8015	53692-15	
TF4-L-R2-B4	Soil	TPH	U	22	500	N	N	3/24/2005	EPA8015	53692-16	
TF4-L-R2-B5	Soil	TPH		92	500	N	N	3/24/2005	EPA8015	53692-17	
TF4-L-R2-B6	Soil	TPH		57	500	N	N	3/24/2005	EPA8015	53692-18	
TF4-L-R2-B7	Soil	TPH	U	34	500	N	N	3/24/2005	EPA8015	53692-19	
TF4-L-R2-B8	Soil	TPH		218	500	N	N	3/24/2005	EPA8015	53692-20	
TF4-L-R2-B9	Soil	TPH		214	500	N	N	3/24/2005	EPA8015	53692-21	

TABLE 7-18
Tank Farm 4 Ruin 2 Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-R2-SW10	Soil	Acenaphthene	U	0.28	43	N	N	4/1/2005	SW8270	53692-6	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene		0.521	35	N	N				120-12-7
		Benzo(a)anthracene		0.703	0.9	N	N				56-55-3
		Benzo(a)pyrene		0.626	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene		0.523	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene		0.364	0.8	N	N				191-24-2
		Benzo(k)fluoranthene		0.503	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene		0.693	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene		1.96	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene		0.398	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene		1.79	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 7-18
Tank Farm 4 Ruin 2 Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-R2-B2*	Soil	Acenaphthene	U	0.3	43	N	N	4/5/2005	SW8270	53692-14RX	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	J	0.161	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	J	0.193	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene		0.325	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
Naphthalene	U	0.3	54	N	N	91-20-3					
Pentachlorophenol	U	0.3	5.3	N	N	87-86-5					
Phenanthrene	J	0.209	40	N	N	85-01-8					
Phenol	U	0.3	6000	N	N	108-95-2					
Pyrene	J	0.292	13	N	N	129-00-0					
1,2,4-Trichlorobenzene	U	0.3	96	N	N	120-82-1					
2,4,5-Trichlorophenol	U	0.3	330	N	N	95-95-4					
2,4,6-Trichlorophenol	U	0.3	58	N	N	88-06-2					

Note: * Surrogate recovery for 2,4,6-Tribromophenol was 16%, below the QC limit of 36% - 141%. Reported results for phenolic compounds may have a low-bias. Results for PAHs are reliable.

TABLE 7-18
Tank Farm 4 Ruin 2 Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-R2-B8*	Soil	Acenaphthene	J	0.153	43	N	N	4/5/2005	SW8270	53692-20RX	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene		0.604	35	N	N				120-12-7
		Benzo(a)anthracene		0.908	0.9	Y	N				56-55-3
		Benzo(a)pyrene		0.901	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene		0.591	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene		0.728	0.8	N	N				191-24-2
		Benzo(k)fluoranthene		0.585	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene		0.869	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	J	0.154	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene		2.11	20	N	N				206-44-0
		Fluorene	J	0.209	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene		0.838	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene		0.954	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene		1.78	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.3	58	N	N				88-06-2

Note: * Surrogate recovery for 2,4,6-Tribromophenol was 7%, below the QC limit of 36% - 141%; surrogate recovery for 2-Fluorophenol was 20%, below the QC limit of 29% - 97%. Reported results for

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phenolic compounds may have a low-bias. Results for PAHs are reliable.

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-R2-B9*	Soil	Acenaphthene	U	0.32	43	N	N	4/5/2005	SW8270	53692-21RX	83-32-9
		Acenaphthylene	U	0.32	23	N	N				208-96-8
		Anthracene	U	0.32	35	N	N				120-12-7
		Benzo(a)anthracene	J	0.165	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.32	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.32	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.32	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.32	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.32	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.32	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.32	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.32	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.32	310	N	N				106-47-8
		2-Chlorophenol	U	0.32	50	N	N				95-57-8
		Chrysene	J	0.183	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.32	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.32	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.32	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.32	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.32	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.32	30	N	N				120-83-2
		Diethyl phthalate	U	0.32	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.32	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.32	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.32	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.32	0.9	N	N				121-14-2
		Fluoranthene		0.37	20	N	N				206-44-0
		Fluorene	U	0.32	28	N	N				86-73-7
		Hexachlorobenzene	U	0.32	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.32	8.2	N	N				87-68-3
		Hexachloroethane	U	0.32	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.32	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.32	123	N	N				91-57-6
		Naphthalene	U	0.32	54	N	N				91-20-3
		Pentachlorophenol	U	0.32	5.3	N	N				87-86-5
		Phenanthrene	J	0.274	40	N	N				85-01-8
		Phenol	U	0.32	6000	N	N				108-95-2
		Pyrene		0.341	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.32	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.32	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.32	58	N	N				88-06-2

TABLE 7-18
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Note: * Surrogate recovery for 2,4,6-Tribromophenol was 30%, below the QC limit of 36% - 141%. Reported results for phenolic compounds may have a low-bias. Results for PAHs are reliable.

TABLE 7-19
Tank Farm 5 Oil/Water Separator Demolition
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
P-TF5-OW-B1	Moist	12/6/04	1	295
P-TF5-OW-B2	Moist	12/6/04	1	255
P-TF5-OW-B3	Saturated	12/6/04	1	124
P-TF5-OW-B4	Saturated	12/6/04	1	116
P-TF5-OW-B5	Saturated	12/6/04	1	156
P-TF5-OW-B6	Moist	12/6/04	1	132
P-TF5-OW-B7	Moist	12/6/04	1	85
P-TF5-OW-B8	Moist	12/6/04	1	98
P-TF5-OW-B9	Moist	12/6/04	1	103
P-TF5-OW-SW1	Slightly Moist	12/6/04	1	36
P-TF5-OW-SW2	Slightly Moist	12/6/04	1	54
P-TF5-OW-SW3	Slightly Moist	12/6/04	1	83
P-TF5-OW-SW4	Slightly Moist	12/6/04	1	199
P-TF5-OW-SW5	Slightly Moist	12/6/04	1	304
P-TF5-OW-SW6	Moist	12/6/04	1	36
P-TF5-OW-SW7	Moist	12/6/04	1	44
P-TF5-OW-SW8	Moist	12/6/04	1	71
P-TF5-OW-SW9	Moist	12/6/04	1	613
P-TF5-OW-SW10	Moist	12/6/04	1	44
P-TF5-OW-SW11	Moist	12/6/04	1	92
P-TF5-OW-SW12	Moist	12/6/04	1	58
P-TF5-OW-SW13	Slightly Moist	12/6/04	1	13
P-TF5-OW-SW14	Slightly Moist	12/6/04	1	36
P-TF5-OW-SW15	Slightly Moist	12/6/04	1	77
P-TF5-OW-SW16	Slightly Moist	12/6/04	1	53

TABLE 7-20
Tank Farm 5 Oil/Water Separator Demolition
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-B1	Soil	Acetone		0.13	7800	N	N	12/14/2004	SW8260B	601268	67-64-1
		Benzene	U	0.0043	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0043	10	N	N				75-27-4
		Bromoform	U	0.0043	81	N	N				75-25-2
		Bromomethane	U	0.0043	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0043	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0043	210	N	N				108-90-7
		Chloroform	U	0.0043	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0043	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0043	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0043	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0043	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0043	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0043	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0043	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0043	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0043	71	N	N				100-41-4
		Ethylene dibromide	U	0.0043	0.01	N	N				
		Isopropyl benzene	U	0.0043	27	N	N				98-82-8
		Methyl ethyl ketone		0.016	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0043	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0043	390	N	N				1634-04-4
		Methylene chloride	U	0.0043	45	N	N				75-09-2
		Styrene	U	0.0043	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0043	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0043	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0043	12	N	N				127-18-4
		Toluene	U	0.0043	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0043	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0043	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0043	13	N	N				79-01-6
		Vinyl chloride	U	0.0043	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0043	110	N	N				1330-20-7

TABLE 7-20
Tank Farm 5 Oil/Water Separator Demolition
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-B4	Soil	Acetone		0.14	7800	N	N	12/14/2004	SW8260B	601269	67-64-1
		Benzene	U	0.0051	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0051	10	N	N				75-27-4
		Bromoform	U	0.0051	81	N	N				75-25-2
		Bromomethane	U	0.0051	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0051	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0051	210	N	N				108-90-7
		Chloroform	U	0.0051	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0051	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0051	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0051	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0051	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0051	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0051	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0051	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0051	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0051	71	N	N				100-41-4
		Ethylene dibromide	U	0.0051	0.01	N	N				
		Isopropyl benzene	U	0.0051	27	N	N				98-82-8
		Methyl ethyl ketone		0.02	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0051	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0051	390	N	N				1634-04-4
		Methylene chloride	U	0.0051	45	N	N				75-09-2
		Styrene	U	0.0051	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0051	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0051	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0051	12	N	N				127-18-4
		Toluene	U	0.0051	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0051	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0051	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0051	13	N	N				79-01-6
		Vinyl chloride	U	0.0051	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0051	110	N	N				1330-20-7

TABLE 7-20
Tank Farm 5 Oil/Water Separator Demolition
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-SW5	Soil	Acetone		0.062	7800	N	N	12/14/2004	SW8260B	601270	67-64-1
		Benzene	U	0.0037	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0037	10	N	N				75-27-4
		Bromoform	U	0.0037	81	N	N				75-25-2
		Bromomethane	U	0.0037	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0037	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0037	210	N	N				108-90-7
		Chloroform	U	0.0037	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0037	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0037	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0037	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0037	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0037	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0037	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0037	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0037	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0037	71	N	N				100-41-4
		Ethylene dibromide	U	0.0037	0.01	N	N				
		Isopropyl benzene	U	0.0037	27	N	N				98-82-8
		Methyl ethyl ketone		0.0095	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0037	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0037	390	N	N				1634-04-4
		Methylene chloride	U	0.0037	45	N	N				75-09-2
		Styrene	U	0.0037	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0037	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0037	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0037	12	N	N				127-18-4
		Toluene	U	0.0037	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0037	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0037	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0037	13	N	N				79-01-6
		Vinyl chloride	U	0.0037	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0037	110	N	N				1330-20-7

TABLE 7-20
Tank Farm 5 Oil/Water Separator Demolition
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-SW9	Soil	Acetone		0.021	7800	N	N	12/14/2004	SW8260B	601271	67-64-1
		Benzene	U	0.004	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.004	10	N	N				75-27-4
		Bromoform	U	0.004	81	N	N				75-25-2
		Bromomethane	U	0.004	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.004	1.5	N	N				56-23-5
		Chlorobenzene	U	0.004	210	N	N				108-90-7
		Chloroform	U	0.004	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.004	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.004	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.004	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.004	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.004	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.004	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.004	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.004	1.9	N	N				78-87-5
		Ethyl benzene	U	0.004	71	N	N				100-41-4
		Ethylene dibromide	U	0.004	0.01	N	N				
		Isopropyl benzene	U	0.004	27	N	N				98-82-8
		Methyl ethyl ketone	J	0.0033	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.004	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.004	390	N	N				1634-04-4
		Methylene chloride	U	0.004	45	N	N				75-09-2
		Styrene	U	0.004	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.004	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.004	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.004	12	N	N				127-18-4
		Toluene	U	0.004	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.004	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.004	3.6	N	N				79-00-5
		Trichloroethylene	U	0.004	13	N	N				79-01-6
		Vinyl chloride	U	0.004	0.02	N	N				75-01-4
		Xylenes (total)	U	0.004	110	N	N				1330-20-7

TABLE 7-21
Tank Farm 5 Oil/Water Separator Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-B1	Soil	Acenaphthene	U	0.3	43	N	N	12/10/2004	SW8270	53207-1	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 7-21
Tank Farm 5 Oil/Water Separator Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-B4	Soil	Acenaphthene	U	0.3	43	N	N	12/11/2004	SW8270	53207-2	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 7-21
Tank Farm 5 Oil/Water Separator Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-SW5	Soil	Acenaphthene	U	0.29	43	N	N	12/10/2004	SW8270	53207-3	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 7-21
Tank Farm 5 Oil/Water Separator Demolition
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-SW9	Soil	Acenaphthene	U	0.28	43	N	N	12/10/2004	SW8270	53207-4	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	U	0.28	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.28	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.28	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.28	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.28	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.28	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene	U	0.28	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene	J	0.187	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.28	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene	U	0.28	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene	J	0.141	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 7-22
Tank Farm 5 Oil/Water Separator Demolition
Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-B1	Soil	Antimony	U	0.43	10	N	N			601268	7440-36-0
		Arsenic		22.2	7.0	Y	N				7440-38-2
		Barium		27.2	5500	N	N				7440-39-3
		Beryllium	B	0.29	0.4	N	N				7440-41-7
		Cadmium		1.1	39	N	N				7440-43-9
		Chromium		14	390	N	N				7440-47-3
		Copper		12.6	3100	N	N				7440-50-8
		Cyanide	U	0.6	200	N	N				57-12-5
		Lead		19.3	150	N	N				7439-92-1
		Manganese		362	390	N	N				7439-96-5
		Mercury	U	0.018	23	N	N				7439-97-6
		Nickel		19.9	1000	N	N				7440-02-0
		Selenium	B	0.4	390	N	N				7782-49-2
		Silver	U	0.15	200	N	N				7440-22-4
		Thallium	U	0.82	5.5	N	N				7440-28-0
		Vanadium		12.1	550	N	N				7440-62-2
Zinc	E	55.5	6000	N	N				7440-66-6		

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-B4	Soil	Antimony	U	0.43	10	N	N			601269	7440-36-0
		Arsenic		18.3	7.0	Y	N				7440-38-2
		Barium		23.7	5500	N	N				7440-39-3
		Beryllium	B	0.35	0.4	N	N				7440-41-7
		Cadmium		1.2	39	N	N				7440-43-9
		Chromium		11	390	N	N				7440-47-3
		Copper		15.1	3100	N	N				7440-50-8
		Cyanide	U	0.61	200	N	N				57-12-5
		Lead		18	150	N	N				7439-92-1
		Manganese		338	390	N	N				7439-96-5
		Mercury		0.02	23	N	N				7439-97-6
		Nickel		15.4	1000	N	N				7440-02-0
		Selenium	B	0.32	390	N	N				7782-49-2
		Silver	U	0.15	200	N	N				7440-22-4
		Thallium	U	0.81	5.5	N	N				7440-28-0
		Vanadium		14.7	550	N	N				7440-62-2
Zinc	E	65	6000	N	N				7440-66-6		

TABLE 7-22
Tank Farm 5 Oil/Water Separator Demolition
Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-SW5	Soil	Antimony	U	0.48	10	N	N			601270	7440-36-0
		Arsenic		37.1	7.0	Y	N				7440-38-2
		Barium	B	18.8	5500	N	N				7440-39-3
		Beryllium	B	0.36	0.4	N	N				7440-41-7
		Cadmium		1.5	39	N	N				7440-43-9
		Chromium		11	390	N	N				7440-47-3
		Copper		23.6	3100	N	N				7440-50-8
		Cyanide	U	0.57	200	N	N				57-12-5
		Lead		17.6	150	N	N				7439-92-1
		Manganese		433	390	Y	N				7439-96-5
		Mercury		0.05	23	N	N				7439-97-6
		Nickel		23.2	1000	N	N				7440-02-0
		Selenium	B	0.36	390	N	N				7782-49-2
		Silver	U	0.17	200	N	N				7440-22-4
		Thallium	U	0.91	5.5	N	N				7440-28-0
		Vanadium		13.9	550	N	N				7440-62-2
		Zinc	E	62	6000	N	N				7440-66-6

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-SW9	Soil	Antimony	U	0.45	10	N	N			601271	7440-36-0
		Arsenic		8.5	7.0	Y	N				7440-38-2
		Barium	B	21.4	5500	N	N				7440-39-3
		Beryllium	B	0.3	0.4	N	N				7440-41-7
		Cadmium		0.88	39	N	N				7440-43-9
		Chromium		7.5	390	N	N				7440-47-3
		Copper		14.7	3100	N	N				7440-50-8
		Cyanide	U	0.57	200	N	N				57-12-5
		Lead		50.7	150	N	N				7439-92-1
		Manganese		331	390	N	N				7439-96-5
		Mercury		0.066	23	N	N				7439-97-6
		Nickel		11.6	1000	N	N				7440-02-0
		Selenium	U	0.33	390	N	N				7782-49-2
		Silver	U	0.16	200	N	N				7440-22-4
		Thallium	U	0.85	5.5	N	N				7440-28-0
		Vanadium		11.9	550	N	N				7440-62-2
		Zinc		44.1	6000	N	N				7440-66-6

TABLE 7-23
Tank Farm 5 Oil/Water Separator Demolition
PCB Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF5-OW-B1	Soil	Total PCBs		0.016	10	N	N	12/10/2004	EPA8082	53207-1	
L-TF5-OW-B4	Soil	Total PCBs	U	0.018	10	N	N	12/10/2004	EPA8082	53207-2	
L-TF5-OW-SW5	Soil	Total PCBs	U	0.018	10	N	N	12/10/2004	EPA8082	53207-3	
L-TF5-OW-SW9	Soil	Total PCBs	U	0.017	10	N	N	12/10/2004	EPA8082	53207-4	

TABLE 7-25
Ruin 1 Straight Line Discharge Pipe Sediment
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-DISCHARGE	Soil	Total Petroleum Hydrocarbons (TPH)		176	500	N	N	1/21/2005	SW8015	53381-2	

TABLE 7-26
Ruin 1 Straight Line Discharge Pipe Sediment
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-DISCHARGE	Soil	Acetone	B	0.16	7800	N	N	1/13/2005	SW8260B	604321	67-64-1
		Benzene	U	0.0072	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0072	10	N	N				75-27-4
		Bromoform	U	0.0072	81	N	N				75-25-2
		Bromomethane	U	0.0072	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0072	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0072	210	N	N				108-90-7
		Chloroform	U	0.0072	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0072	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0072	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0072	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0072	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0072	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0072	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0072	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0072	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0072	71	N	N				100-41-4
		Ethylene dibromide	U	0.0072	0.01	N	N				
		Isopropyl benzene	U	0.0072	27	N	N				98-82-8
		Methyl ethyl ketone		0.03	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0072	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	J	0.0027	390	N	N				1634-04-4
		Methylene chloride	U	0.0072	45	N	N				75-09-2
		Styrene	U	0.0072	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0072	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0072	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0072	12	N	N				127-18-4
		Toluene	J	0.002	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0072	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0072	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0072	13	N	N				79-01-6
		Vinyl chloride	U	0.0072	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0072	110	N	N				1330-20-7

TABLE 7-27
Ruin 1 Straight Line Discharge Pipe Sediment
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-DISCHARGE	Soil	Acenaphthene		0.4	43	N	N	1/13/2005	SW8270C	53381-2	83-32-9
		Acenaphthylene	U	0.4	23	N	N				208-96-8
		Anthracene	U	0.4	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.4	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.4	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.4	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.4	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.4	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.4	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.4	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.4	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.4	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.4	310	N	N				106-47-8
		2-Chlorophenol	U	0.4	50	N	N				95-57-8
		Chrysene	U	0.4	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.4	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.4	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.4	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.4	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.4	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.4	30	N	N				120-83-2
		Diethyl phthalate	U	0.4	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.4	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.4	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.4	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.4	0.9	N	N				121-14-2
		Fluoranthene	U	0.4	20	N	N				206-44-0
		Fluorene	U	0.4	28	N	N				86-73-7
		Hexachlorobenzene	U	0.4	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.4	8.2	N	N				87-68-3
		Hexachloroethane	U	0.4	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.4	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.4	123	N	N				91-57-6
		Naphthalene	U	0.4	54	N	N				91-20-3
		Pentachlorophenol	U	0.4	5.3	N	N				87-86-5
		Phenanthrene	U	0.4	40	N	N				85-01-8
		Phenol	U	0.4	6000	N	N				108-95-2
		Pyrene	U	0.4	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.4	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.4	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.4	58	N	N				88-06-2

TABLE 7-28
Ruin 1 Straight Line Discharge Pipe Sediment
Dioxins/Furans Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
L-TF4-R1-DISCHARGE	Soil	1,2,3,4,6,7,8-HpCDD		26					1/18/2005	SW8290	G5A130357-001	35822-46-9
		1,2,3,4,6,7,8-HpCDF	U	2.9								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	2.1								55673-89-7
		1,2,3,4,7,8-HxCDD	U	2.1								39227-28-6
		1,2,3,4,7,8-HxCDF	U	1.3								70648-26-9
		1,2,3,6,7,8-HxCDD	U	1.9								57653-85-7
		1,2,3,6,7,8-HxCDF	U	1.3								57117-44-9
		1,2,3,7,8,9-HxCDD	U	1.9								19408-74-3
		1,2,3,7,8,9-HxCDF	U	1.6								72918-21-9
		1,2,3,7,8-PeCDD	U	3.1								40321-76-4
		1,2,3,7,8-PeCDF	U	2.1								57117-41-6
		2,3,4,6,7,8-HxCDF	U	1.4								60851-34-5
		2,3,4,7,8-PeCDF	U	2								57117-31-4
		2,3,7,8-TCDD	U	1.2								1746-01-6
		2,3,7,8-TCDF	U	1.2								51207-31-9
		OCDD		1300								3268-87-9
		OCDF	U	8								39001-02-0
		Total HpCDDs		55								37871-00-4
		Total HpCDFs	U	3.8								38998-75-3
		Total HxCDDs	U	2.1								34465-46-8
		Total HxCDFs	U	1.6								55684-94-1
		Total PeCDDs	U	3.1								36088-22-9
		Total PeCDFs	U	2.3								30402-15-4
		Total TCDDs	U	1.2								41903-57-5
		Total TCDFs	U	1.2								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		4.2	3.9	Y						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-29
Tank Farm 5 Oil/Water Separator Discharge
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF5-OW-DISCHARGE5	Dry	1524/2-7-05	1	25
TF5-OW-DISCHARGE6	Slightly Moist	1525/2-7-05	1	203
TF5-OW-DISCHARGE7	Slightly Moist	1527/2-7-05	1	15
TF5-OW-DISCHARGE8	Dry	1527/2-7-05	1	33
TF5-OW-DISCHARGE9	Dry	1528/2-8-05	1	101
TF5-OW-DISCHARGE10	Moist	samples too wet to run, sending to lab for analysis		
TF5-OW-DISCHARGE11	Moist	samples too wet to run, sending to lab for analysis		
TF5-OW-DISCHARGE12	Moist	samples too wet to run, sending to lab for analysis		

Notes:

Dilution Factor: e.g., for 5 g soil sample DF=10g/5g=2

TABLE 7-30
Tank Farm 5 Oil/Water Separator Discharge
TPH Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE1	Soil	Total Petroleum Hydrocarbons (TPH)		185	500	N	N	2/2/2005	SW8015	53480-1	
TF5-OW-DISCHARGE2	Soil	Total Petroleum Hydrocarbons (TPH)		90	500	N	N	2/2/2005	SW8015	53480-2	
TF5-OW-DISCHARGE4	Soil	Total Petroleum Hydrocarbons (TPH)		45	500	N	N	2/10/2005	SW8015	53526-1	
TF5-OW-DISCHARGE6	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	2/10/2005	SW8015	53526-2	
TF5-OW-DISCHARGE9	Soil	Total Petroleum Hydrocarbons (TPH)		48	500	N	N	2/10/2005	SW8015	53526-3	
TF5-OW-DISCHARGE10	Soil	Total Petroleum Hydrocarbons (TPH)		40	500	N	N	2/10/2005	SW8015	53526-4	
TF5-OW-DISCHARGE11	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	2/10/2005	SW8015	53526-5	
TF5-OW-DISCHARGE12	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	2/10/2005	SW8015	53526-6	
TF5-OW-DISCHARGE13	Soil	Total Petroleum Hydrocarbons (TPH)		86	500	N	N	2/22/2005	SW8015	53554-1	
TF5-OW-DISCHARGE14	Soil	Total Petroleum Hydrocarbons (TPH)		182	500	N	N	2/22/2005	SW8015	53554-2	
TF5-OW-DISCHARGE15	Soil	Total Petroleum Hydrocarbons (TPH)		327	500	N	N	2/23/2005	SW8015	53579-1	
TF5-OW-WESTCHAM-P3	Soil	Total Petroleum Hydrocarbons (TPH)		60	500	N	N	2/2/2005	SW8015	53480-3	

TABLE 7-31
Tank Farm 5 Oil/Water Separator Discharge
VOC Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE1	Soil	Acetone	B	0.018	7800	N	N	2/3/2005	SW8260B	607012	67-64-1
		Benzene	U	0.0029	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0029	10	N	N				75-27-4
		Bromoform	U	0.0029	81	N	N				75-25-2
		Bromomethane	U	0.0029	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0029	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0029	210	N	N				108-90-7
		Chloroform	U	0.0029	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0029	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0029	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0029	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0029	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0029	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0029	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0029	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0029	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0029	71	N	N				100-41-4
		Ethylene dibromide	U	0.0029	0.01	N	N				
		Isopropyl benzene	U	0.0029	27	N	N				98-82-8
		Methyl ethyl ketone		0.0045	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0029	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0029	390	N	N				1634-04-4
		Methylene chloride	U	0.0029	45	N	N				75-09-2
		Styrene	U	0.0029	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0029	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0029	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0029	12	N	N				127-18-4
		Toluene	J	0.00064	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0029	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0029	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0029	13	N	N				79-01-6
		Vinyl chloride	U	0.0029	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0029	110	N	N				1330-20-7

TABLE 7-31
Tank Farm 5 Oil/Water Separator Discharge
VOC Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE14	Soil	Acetone		29	7800	N	N	2/25/2005	SW8260B	609108	67-64-1
		Benzene	U	0.003	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.003	10	N	N				75-27-4
		Bromoform	U	0.003	81	N	N				75-25-2
		Bromomethane	U	0.003	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.003	1.5	N	N				56-23-5
		Chlorobenzene	U	0.003	210	N	N				108-90-7
		Chloroform	U	0.003	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.003	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.003	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.003	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.003	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.003	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.003	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.003	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.003	1.9	N	N				78-87-5
		Ethyl benzene	U	0.003	71	N	N				100-41-4
		Ethylene dibromide	U	0.003	0.01	N	N				
		Isopropyl benzene	U	0.003	27	N	N				98-82-8
		Methyl ethyl ketone		0.0057	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.003	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.003	390	N	N				1634-04-4
		Methylene chloride	U	0.003	45	N	N				75-09-2
		Styrene	U	0.003	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.003	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.003	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.003	12	N	N				127-18-4
		Toluene	U	0.003	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.003	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.003	3.6	N	N				79-00-5
		Trichloroethylene	U	0.003	13	N	N				79-01-6
		Vinyl chloride	U	0.003	0.02	N	N				75-01-4
		Xylenes (total)	U	0.003	110	N	N				1330-20-7

**TABLE 7-31
Tank Farm 5 Oil/Water Separator Discharge
VOC Analytical Results**

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE15	Soil	Acetone		0.055	7800	N	N	3/3/2005	SW8260B	609474	67-64-1
		Benzene	U	0.0042	2.5	N	N				71-43-2
		Bromodichloromethane	U	0.0042	10	N	N				75-27-4
		Bromoform	U	0.0042	81	N	N				75-25-2
		Bromomethane	U	0.0042	0.8	N	N				74-83-9
		Carbon tetrachloride	U	0.0042	1.5	N	N				56-23-5
		Chlorobenzene	U	0.0042	210	N	N				108-90-7
		Chloroform	U	0.0042	1.2	N	N				67-66-3
		Dibromochloromethane	U	0.0042	7.6	N	N				124-48-1
		Dibromochloropropane	U	0.0042	0.5	N	N				96-12-8
		1,1-Dichloroethane	U	0.0042	920	N	N				75-34-3
		1,1-Dichloroethene	U	0.0042	0.2	N	N				75-35-4
		1,2-Dichloroethane	U	0.0042	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	U	0.0042	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	U	0.0042	1100	N	N				156-60-5
		1,2-Dichloropropane	U	0.0042	1.9	N	N				78-87-5
		Ethyl benzene	U	0.0042	71	N	N				100-41-4
		Ethylene dibromide	U	0.0042	0.01	N	N				
		Isopropyl benzene	U	0.0042	27	N	N				98-82-8
		Methyl ethyl ketone		0.01	10000	N	N				78-93-3
		Methyl isobutyl ketone	U	0.0042	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	U	0.0042	390	N	N				1634-04-4
		Methylene chloride	U	0.0042	45	N	N				75-09-2
		Styrene	U	0.0042	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	U	0.0042	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	U	0.0042	1.3	N	N				79-34-5
		Tetrachloroethylene	U	0.0042	12	N	N				127-18-4
		Toluene	U	0.0042	190	N	N				108-88-3
		1,1,1-Trichloroethane	U	0.0042	540	N	N				71-55-6
		1,1,2-Trichloroethane	U	0.0042	3.6	N	N				79-00-5
		Trichloroethylene	U	0.0042	13	N	N				79-01-6
		Vinyl chloride	U	0.0042	0.02	N	N				75-01-4
		Xylenes (total)	U	0.0042	110	N	N				1330-20-7

TABLE 7-32
Tank Farm 5 Oil/Water Separator Discharge
SVOC Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-Discharge1	Soil	Acenaphthene	U	0.31	43	N	N	2/8/2005	SW8270C	53484-1	83-32-9
		Acenaphthylene	U	0.31	23	N	N				208-96-8
		Anthracene	J	0.164	35	N	N				120-12-7
		Benzo(a)anthracene		0.537	0.9	N	N				56-55-3
		Benzo(a)pyrene		0.461	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene		0.434	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	J	0.262	0.8	N	N				191-24-2
		Benzo(k)fluoranthene		0.359	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.31	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.31	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.31	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.31	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.31	310	N	N				106-47-8
		2-Chlorophenol	U	0.31	50	N	N				95-57-8
		Chrysene		0.547	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.31	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.31	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		Diethyl phthalate	U	0.31	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.31	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.31	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.31	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.31	0.9	N	N				121-14-2
		Fluoranthene		1.32	20	N	N				206-44-0
		Fluorene	U	0.31	28	N	N				86-73-7
		Hexachlorobenzene	U	0.31	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.31	8.2	N	N				87-68-3
		Hexachloroethane	U	0.31	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	J	0.304	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.31	123	N	N				91-57-6
		Naphthalene	U	0.31	54	N	N				91-20-3
		Pentachlorophenol	U	0.31	5.3	N	N				87-86-5
		Phenanthrene		0.879	40	N	N				85-01-8
		Phenol	U	0.31	6000	N	N				108-95-2
		Pyrene		1.09	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.31	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.31	58	N	N				88-06-2

TABLE 7-32
Tank Farm 5 Oil/Water Separator Discharge
SVOC Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-Discharge14	Soil	Acenaphthene	U	0.28	43	N	N	2/26/2005	SW8270C	53568-1	83-32-9
		Acenaphthylene	U	0.28	23	N	N				208-96-8
		Anthracene	J	176	35	Y	N				120-12-7
		Benzo(a)anthracene		0.936	0.9	Y	N				56-55-3
		Benzo(a)pyrene		1.04	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene		0.911	0.9	Y	N				205-99-2
		Benzo(g,h,i)perylene	J	0.352	0.8	N	N				191-24-2
		Benzo(k)fluoranthene		0.898	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.28	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.28	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.28	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.28	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.28	310	N	N				106-47-8
		2-Chlorophenol	U	0.28	50	N	N				95-57-8
		Chrysene		1.02	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.28	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.28	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.28	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.28	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.28	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.28	30	N	N				120-83-2
		Diethyl phthalate	U	0.28	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.28	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.28	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.28	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.28	0.9	N	N				121-14-2
		Fluoranthene		1.56	20	N	N				206-44-0
		Fluorene	U	0.28	28	N	N				86-73-7
		Hexachlorobenzene	U	0.28	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.28	8.2	N	N				87-68-3
		Hexachloroethane	U	0.28	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene		0.494	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.28	123	N	N				91-57-6
		Naphthalene	U	0.28	54	N	N				91-20-3
		Pentachlorophenol	U	0.28	5.3	N	N				87-86-5
		Phenanthrene		0.736	40	N	N				85-01-8
		Phenol	U	0.28	6000	N	N				108-95-2
		Pyrene		1.22	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.28	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.28	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.28	58	N	N				88-06-2

TABLE 7-32
Tank Farm 5 Oil/Water Separator Discharge
SVOC Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-Discharge15	Soil	Acenaphthene	U	0.34	43	N	N	3/2/2005	SW8270C	53588-1	83-32-9
		Acenaphthylene	U	0.34	23	N	N				208-96-8
		Anthracene	U	0.34	35	N	N				120-12-7
		Benzo(a)anthracene		0.415	0.9	N	N				56-55-3
		Benzo(a)pyrene		0.43	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene		0.409	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	J	0.34	0.8	N	N				191-24-2
		Benzo(k)fluoranthene		0.356	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.34	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.34	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.34	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.34	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.34	310	N	N				106-47-8
		2-Chlorophenol	U	0.34	50	N	N				95-57-8
		Chrysene		0.447	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.34	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.34	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.34	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.34	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.34	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.34	30	N	N				120-83-2
		Diethyl phthalate	U	0.34	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.34	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.34	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.34	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.34	0.9	N	N				121-14-2
		Fluoranthene		0.695	20	N	N				206-44-0
		Fluorene	U	0.34	28	N	N				86-73-7
		Hexachlorobenzene	U	0.34	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.34	8.2	N	N				87-68-3
		Hexachloroethane	U	0.34	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	J	0.182	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.34	123	N	N				91-57-6
		Naphthalene	U	0.34	54	N	N				91-20-3
		Pentachlorophenol	U	0.34	5.3	N	N				87-86-5
		Phenanthrene	J	0.316	40	N	N				85-01-8
		Phenol	U	0.34	6000	N	N				108-95-2
		Pyrene		0.526	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.34	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.34	330	N	N				95-95-4
		2,4,6- Trichlorophenol	U	0.34	58	N	N				88-06-2

TABLE 7-33
Tank Farm 5 Oil/Water Separator Discharge
Metals Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE1	Soil	Antimony	B	0.75	10	N	N		SW6010/7471	607150	7440-36-0
		Arsenic		51.5	7.0	Y	N				7440-38-2
		Barium	B	19.4	5500	N	N				7440-39-3
		Beryllium	B	0.41	0.4	Y	N				7440-41-7
		Cadmium		0.52	39	N	N				7440-43-9
		Chromium		11	390	N	N				7440-47-3
		Copper		19.6	3100	N	N				7440-50-8
		Cyanide	U	0.62	200	N	N				57-12-5
		Lead		17.2	150	N	N				7439-92-1
		Manganese		652	390	Y	N				7439-96-5
		Mercury	U	0.016	23	N	N				7439-97-6
		Nickel		28	1000	N	N				7440-02-0
		Selenium	U	0.49	390	N	N				7782-49-2
		Silver	U	0.14	200	N	N				7440-22-4
		Thallium		1.4	5.5	N	N				7440-28-0
		Vanadium		14.1	550	N	N				7440-62-2
		Zinc		105	6000	N	N				7440-66-6

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE14	Soil	Antimony	B	0.55	10	N	N	2/24/2005	SW6010/7471	609108	7440-36-0
		Arsenic		19.4	7.0	Y	N				7440-38-2
		Barium	B	15.2	5500	N	N				7440-39-3
		Beryllium	B	0.36	0.4	N	N				7440-41-7
		Cadmium	B	0.38	39	N	N				7440-43-9
		Chromium		13.1	390	N	N				7440-47-3
		Copper		20.8	3100	N	N				7440-50-8
		Cyanide	U	0.68	200	N	N				57-12-5
		Lead		23.5	150	N	N				7439-92-1
		Manganese		386	390	N	N				7439-96-5
		Mercury	U	0.022	23	N	N				7439-97-6
		Nickel		21.7	1000	N	N				7440-02-0
		Selenium	U	0.6	390	N	N				7782-49-2
		Silver	U	0.17	200	N	N				7440-22-4
		Thallium		0.86	5.5	N	N				7440-28-0
		Vanadium		14.1	550	N	N				7440-62-2
		Zinc		61.2	6000	N	N				7440-66-6

TABLE 7-33
Tank Farm 5 Oil/Water Separator Discharge
Metals Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE15	Soil	Antimony	B	0.73	10	N	N	3/1/2005	SW6010/7471	609474	7440-36-0
		Arsenic		17.7	7.0	Y	N				7440-38-2
		Barium	B	24.9	5500	N	N				7440-39-3
		Beryllium	B	0.45	0.4	Y	N				7440-41-7
		Cadmium	B	0.61	39	N	N				7440-43-9
		Chromium		13.5	390	N	N				7440-47-3
		Copper		20.2	3100	N	N				7440-50-8
		Cyanide	U	0.56	200	N	N				57-12-5
		Lead		57.8	150	N	N				7439-92-1
		Manganese		314	390	N	N				7439-96-5
		Mercury	B	0.032	23	N	N				7439-97-6
		Nickel		22.4	1000	N	N				7440-02-0
		Selenium	U	0.62	390	N	N				7782-49-2
		Silver	U	0.18	200	N	N				7440-22-4
		Thallium	U	0.89	5.5	N	N				7440-28-0
		Vanadium		17.5	550	N	N				7440-62-2
		Zinc		106	6000	N	N				7440-66-6

**TABLE 7-34
Tank Farm 5 Oil/Water Separator Discharge
PCB Analytical Results**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE1	Soil	Total PCBs	U	0.018	10	N	N	2/7/2005	EPA 8082	53484-1	
TF5-OW-DISCHARGE14	Soil	Total PCBs	U	0.017	10	N	N	2/24/2005	EPA 8082	53568-1	
TF5-OW-DISCHARGE15	Soil	Total PCBs		0.023	10	N	N	3/3/2005	EPA 8082	53588-1	

TABLE 7-35
Tank Farm 5 Oil/Water Separator Discharge
Dioxin/Furans Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE1	Soil	1,2,3,4,6,7,8-HpCDD		95					2/11/2005	SW8290		35822-46-9
		1,2,3,4,6,7,8-HpCDF	J	3.5								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	0.33								55673-89-7
		1,2,3,4,7,8-HxCDD	U	0.92								39227-28-6
		1,2,3,4,7,8-HxCDF	U	0.48								70648-26-9
		1,2,3,6,7,8-HxCDD	U	0.97								57653-85-7
		1,2,3,6,7,8-HxCDF	U	0.45								57117-44-9
		1,2,3,7,8,9-HxCDD	U	1.5								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.52								72918-21-9
		1,2,3,7,8-PeCDD	U	0.44								40321-76-4
		1,2,3,7,8-PeCDF	U	0.41								57117-41-6
		2,3,4,6,7,8-HxCDF	U	0.49								60851-34-5
		2,3,4,7,8-PeCDF	U	0.43								57117-31-4
		2,3,7,8-TCDD		1.7								1746-01-6
		2,3,7,8-TCDF	U	1.1								51207-31-9
		OCDD	E	13000								3268-87-9
		OCDF	U	4.6								39001-02-0
		Total HpCDDs		180								37871-00-4
		Total HpCDFs		7.5								38998-75-3
		Total HxCDDs		8.9								34465-46-8
		Total HxCDFs		1.5								55684-94-1
		Total PeCDDs		3.7								36088-22-9
		Total PeCDFs		1.3								30402-15-4
		Total TCDDs		1.7								41903-57-5
		Total TCDFs		1.1								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		16.3	3.9	Y						

Note:
* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-35
Tank Farm 5 Oil/Water Separator Discharge
Dioxin/Furans Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE14	Soil	1,2,3,4,6,7,8-HpCDD		83					3/1/2005	SW8290		35822-46-9
		1,2,3,4,6,7,8-HpCDF		24								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	1.4								55673-89-7
		1,2,3,4,7,8-HxCDD	U	1.1								39227-28-6
		1,2,3,4,7,8-HxCDF	U	1.6								70648-26-9
		1,2,3,6,7,8-HxCDD	J	3.3								57653-85-7
		1,2,3,6,7,8-HxCDF	U	1.6								57117-44-9
		1,2,3,7,8,9-HxCDD	U	2.5								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.36								72918-21-9
		1,2,3,7,8-PeCDD	U	0.4								40321-76-4
		1,2,3,7,8-PeCDF	U	0.39								57117-41-6
		2,3,4,6,7,8-HxCDF	U	1.2								60851-34-5
		2,3,4,7,8-PeCDF	U	0.4								57117-31-4
		2,3,7,8-TCDD	U	0.21								1746-01-6
		2,3,7,8-TCDF		2.9								51207-31-9
		OCDD		3400								3268-87-9
		OCDF	U	36								39001-02-0
		Total HpCDDs		140								37871-00-4
		Total HpCDFs		47								38998-75-3
		Total HxCDDs		13								34465-46-8
		Total HxCDFs		22								55684-94-1
		Total PeCDDs	U	0.47								36088-22-9
		Total PeCDFs	U	2.5								30402-15-4
		Total TCDDs	U	1								41903-57-5
		Total TCDFs		2.9								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		6.0	3.9	Y						

Note:
* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-35
Tank Farm 5 Oil/Water Separator Discharge
Dioxin/Furans Analytical Results

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-OW-DISCHARGE15	Soil	1,2,3,4,6,7,8-HpCDD		180					3/4/2005	SW8290		35822-46-9
		1,2,3,4,6,7,8-HpCDF		33								67562-39-4
		1,2,3,4,7,8,9-HpCDF	U	1.8								55673-89-7
		1,2,3,4,7,8-HxCDD	U	2.3								39227-28-6
		1,2,3,4,7,8-HxCDF	U	3								70648-26-9
		1,2,3,6,7,8-HxCDD	J	6.9								57653-85-7
		1,2,3,6,7,8-HxCDF	U	3.3								57117-44-9
		1,2,3,7,8,9-HxCDD	J	4.9								19408-74-3
		1,2,3,7,8,9-HxCDF	U	0.53								72918-21-9
		1,2,3,7,8-PeCDD	U	1.1								40321-76-4
		1,2,3,7,8-PeCDF	U	0.68								57117-41-6
		2,3,4,6,7,8-HxCDF	U	2.3								60851-34-5
		2,3,4,7,8-PeCDF	U	1.3								57117-31-4
		2,3,7,8-TCDD	U	0.33								1746-01-6
		2,3,7,8-TCDF	J	1								51207-31-9
		OCDD		7100								3268-87-9
		OCDF		58								39001-02-0
		Total HpCDDs		320								37871-00-4
		Total HpCDFs		70								38998-75-3
		Total HxCDDs		41								34465-46-8
		Total HxCDFs		40								55684-94-1
		Total PeCDDs	U	2.4								36088-22-9
		Total PeCDFs		22								30402-15-4
		Total TCDDs	U	1								41903-57-5
		Total TCDFs		14								55722-27-5
		2,3,7,8-TCDD Toxicity Equivalents*		12.1	3.9	Y						

Note:
* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-36
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF4-P-STRAIGHTDIS-19	Dry	8/16/05	1	49
TF4-P-STRAIGHTDIS-20	Dry	8/16/05	1	284
TF4-P-STRAIGHTDIS-22	Dry	8/16/05	1	410
TF4-P-STRAIGHTDIS-J16-S	Slightly Moist	1/10/06	1	1183

Notes:
DF=10g/5g=2

TABLE 7-37
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	Analysis Run
TF4-L-STRAIGHTDIS-11	Soil	TPH	24	479	500	N	N	8/18/2005	SW8015	54738-1		TPH
TF4-L-STRAIGHTDIS-12	Soil	TPH	26	101	500	N	N	8/18/2005	SW8015	54738-2		TPH
TF4-L-STRAIGHTDIS-10	Soil	TPH	26	92	500	N	N	8/18/2005	SW8015	54738-3		TPH
TF4-L-STRAIGHTDIS-14D	Soil	TPH	24	122	500	N	N	8/18/2005	SW8015	54738-4		TPH
TF4-L-STRAIGHTDIS-13	Soil	TPH	24	123	500	N	N	8/18/2005	SW8015	54738-5		TPH
TF4-L-STRAIGHTDIS-14	Soil	TPH	24	109	500	N	N	8/18/2005	SW8015	54738-6		TPH
TF4-L-STRAIGHTDIS-15	Soil	TPH	22	168	500	N	N	8/18/2005	SW8015	54738-7		TPH
TF4-L-STRAIGHTDIS-21	Soil	TPH	26	215	500	N	N	8/18/2005	SW8015	54738-8		TPH
TF4-L-STRAIGHTDIS-18	Soil	TPH	24	160	500	N	N	8/18/2005	SW8015	54738-9		TPH
TF4-L-STRAIGHTDIS-22	Soil	TPH	22	283	500	N	N	8/18/2005	SW8015	54738-10		TPH
TF4-L-STRAIGHTDIS-20	Soil	TPH	26	164	500	N	N	8/18/2005	SW8015	54738-11		TPH
TF4-L-STRAIGHTDIS-9B	Soil	TPH	28	142	500	N	N	8/24/2005	SW8015	54775-2		TPH
TF4-L-STRAIGHTDIS-25	Soil	TPH	22	170	500	N	N	8/24/2005	SW8015	54775-3		TPH
TF4-L-STRAIGHTDIS-26	Soil	TPH	22	86	500	N	N	8/24/2005	SW8015	54775-4		TPH
TF4-L-STRAIGHTDIS-9C	Soil	TPH	22	87	500	N	N	8/26/2005	SW8015	54794-3		TPH
TF4-L-STRAIGHTDIS-9D	Soil	TPH	22	94	500	N	N	8/25/2005	SW8015	54794-4		TPH
TF4-L-STRAIGHTDIS-27	Soil	TPH	26	39	500	N	N	8/31/2005	SW8015	54827-1		TPH
TF4-L-STRAIGHTDIS-9E	Soil	TPH	26	113	500	N	N	8/31/2005	SW8015	54827-2		TPH
TF4-L-STRAIGHTDIS-11B	Soil	TPH	24	61	500	N	N	9/1/2005	SW8015	54827-3		TPH
TF4-L-STRAIGHTDIS-17B	Soil	TPH	24	221	500	N	N	9/1/2005	SW8015	54827-4		TPH
TF4-L-STRAIGHTDIS-9F	Soil	TPH	26	57	500	N	N	9/8/2005	SW8015	54862-1		TPH
TF4-L-STRAIGHTDIS-17D	Soil	TPH	300	2560	500	Y	N	9/9/2005	SW8015	54862-2		TPH
TF4-L-STRAIGHTDIS-23	Soil	TPH	300	1530	500	Y	N	8/20/2005	SW8015	54743-1		TPH
TF4-L-STRAIGHTDIS-16A	Soil	TPH	22	83	500	N	N	8/20/2005	SW8015	54743-2		TPH
TF4-L-STRAIGHTDIS-17A	Soil	TPH	22	168	500	N	N	8/20/2005	SW8015	54743-3		TPH
TF4-L-STRAIGHTDIS-24	Soil	TPH	22	93	500	N	N	8/20/2005	SW8015	54743-4		TPH
TF4-L-STRAIGHTDIS-9A	Soil	TPH	340	1070	500	Y	N	8/20/2005	SW8015	54743-5		TPH
TF4-L-STRAIGHTDIS-E7	Soil	TPH	24	74	500	N	N	9/29/2005	SW8015	54987-3		TPH
TF4-L-STRAIGHTDIS-E8	Soil	TPH	24	59	500	N	N	9/29/2005	SW8015	54987-4		TPH
TF4-L-STRAIGHTDIS-E9	Soil	TPH	28	394	500	N	N	9/29/2005	SW8015	54987-5		TPH
TF4-L-STRAIGHTDIS-E10	Soil	TPH	24	262	500	N	N	9/29/2005	SW8015	54987-6		TPH
TF4-L-STRAIGHTDIS-E11	Soil	TPH	24	36	500	N	N	9/30/2005	SW8015	54987-7		TPH
TF4-L-STRAIGHTDIS-F9	Soil	TPH	26	85	500	N	N	9/30/2005	SW8015	54987-8		TPH
TF4-L-STRAIGHTDIS-F10	Soil	TPH	24	40	500	N	N	9/30/2005	SW8015	54987-9		TPH
TF4-L-STRAIGHTDIS-F11	Soil	TPH	24	44	500	N	N	9/30/2005	SW8015	54987-10		TPH
TF4-L-STRAIGHTDIS-G9	Soil	TPH	24	39	500	N	N	9/30/2005	SW8015	54987-11		TPH
TF4-L-STRAIGHTDIS-G10	Soil	TPH	24	33	500	N	N	9/30/2005	SW8015	54987-12		TPH
TF4-L-STRAIGHTDIS-G11	Soil	TPH	24	48	500	N	N	9/30/2005	SW8015	54987-13		TPH
TF4-L-STRAIGHTDIS-B2	Soil	TPH	24	35	500	N	N	9/30/2005	SW8015	54987-14		TPH
TF4-L-STRAIGHTDIS-A2	Soil	TPH	26	62	500	N	N	9/30/2005	SW8015	54987-15		TPH
TF4-L-STRAIGHTDIS-9H	Soil	TPH	24	43	500	N	N	9/30/2005	SW8015	54987-16		TPH
TF4-L-STRAIGHTDIS-29	Soil	TPH	44	U	500	N	N	11/2/2005	SW8015	55237-1		TPH
TF4-L-STRAIGHTDIS-32	Soil	TPH	42	181	500	N	N	11/2/2005	SW8015	55237-2		TPH, SVOCs
TF4-L-STRAIGHTDIS-35	Soil	TPH	42	627	500	Y	N	11/2/2005	SW8015	55237-3		TPH
TF4-L-STRAIGHTDIS-38	Soil	TPH	38	1140	500	Y	N	11/2/2005	SW8015	55237-4		TPH
TF4-L-STRAIGHTDIS-41	Soil	TPH	50	154	500	N	N	11/2/2005	SW8015	55237-5		TPH, SVOCs
TF4-L-STRAIGHTDIS-44	Soil	TPH	60	91	500	N	N	11/2/2005	SW8015	55237-6		TPH

TABLE 7-37
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory TPH Analytical Data

TF4-L-STRAIGHTDIS-34	Soil	TPH	28	123	500	N	N	11/10/2005	SW8015	55297-5		TPH, SVOCs
TF4-L-STRAIGHTDIS-36	Soil	TPH	30	171	500	N	N	11/10/2005	SW8015	55297-6		TPH, SVOCs
TF4-L-STRAIGHTDIS-39	Soil	TPH	26	88	500	N	N	11/10/2005	SW8015	55297-7		TPH
TF4-L-STRAIGHTDIS-37	Soil	TPH	28	108	500	N	N	11/10/2005	SW8015	55297-8		TPH, SVOCs
TF4-L-STRAIGHTDIS-46	Soil	TPH	36	218	500	N	N	12/24/2005	SW8015	55616-1		TPH, SVOCs
TF4-L-STRAIGHTDIS-44-1	Soil	TPH	40	256	500	N	N	12/24/2005	SW8015	55616-2		TPH, SVOCs
TF-L-STRAIGHTDIS-M19-S5	Soil	TPH	26	55	500	N	N	1/30/2006	SW8015	55793-1		TPH, SVOCs
TF-L-STRAIGHTDIS-M19-S11	Soil	TPH	26	49	500	N	N	1/31/2006	SW8015	55793-2		TPH, SVOCs
TF-L-STRAIGHTDIS-M19-S21	Soil	TPH	26	9350	500	Y	N	1/31/2006	SW8015	55793-3		TPH
TF-L-STRAIGHTDIS-J17-S29	Soil	TPH	26	154	500	N	N	1/31/2006	SW8015	55793-4		TPH, SVOCs
TF-L-STRAIGHTDIS-J17-S19	Soil	TPH	26	63	500	N	N	1/31/2006	SW8015	55793-5		TPH, SVOCs
TF-L-STRAIGHTDIS-J17-S9	Soil	TPH	26	67	500	N	N	1/31/2006	SW8015	55793-6		TPH, SVOCs
TF4-L-STRAIGHTDIS-52-S	Soil	TPH	72	10400	500	Y	N	2/28/2006	SW8015	55924-7		TPH, D/F
Testpits 1 & 4: Excavated Northwest of Samples TF4-C-STRAIGHTDIS-M13-S, TF4-C-STRAIGHTDIS-L11-S, TF4-C-STRAIGHTDIS-K9-S												
TF4-L-TESTPIT07-SW-1	Soil	TPH	28	38	500	N	N	3/2/2006	SW8015B	55935-4		TPH
TF4-L-TESTPIT06-SW-1	Soil	TPH	700	16900	500	Y	Y	3/2/2006	SW8015B	55935-3		TPH
TF4-L-TESTPIT04-SW-1	Soil	TPH	32	218	500	N	N	2/21/2006	SW8015B	55885-3		TPH, SVOCs
TF4-L-TESTPIT04-SW-2	Soil	TPH	480	10500	500	Y	N	2/22/2006	SW8015B	55885-4		TPH
TF4-L-TESTPIT01-SW-1	Soil	TPH	26	36	500	N	N	2/21/2006	SW8015B	55885-5		TPH
TF4-L-TESTPIT01-SW-2	Soil	TPH	32	1910	500	Y	N	2/22/2006	SW8015B	55885-6		TPH
TF4-L-TESTPIT01-SW-3	Soil	TPH	46	2910	500	Y	N	2/22/2006	SW8015B	55885-7		TPH
Testpits 2 & 3: Excavated Northwest of Samples TF4-C-STRAIGHTDIS-54-S												
TF4-L-TESTPIT03-SW-1	Soil	TPH	28	285	500	N	N	2/21/2006	SW8015B	55885-8		TPH, SVOCs
TF4-L-TESTPIT03-SW-2	Soil	TPH	32	332	500	N	N	2/22/2006	SW8015B	55885-9		TPH, SVOCs

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-32	Soil	Acenaphthene	0.54		U	43	N	N	11/11/2005	8270	55298-11	83-32-9
		Acenaphthylene	0.54		U	23	N	N				208-96-8
		Anthracene	0.54		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.54		0.618	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.54	J	0.531	0.4	Y	Y				50-32-8
		Benzo(b)fluoranthene	0.54	J	0.45	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.54		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.54	J	0.438	0.9	N	N				207-08-9
		1,1-Biphenyl	0.54		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.54		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.54		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.54		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.54		U	310	N	N				106-47-8
		2-Chlorophenol	0.54		U	50	N	N				95-57-8
		Chrysene	0.54		0.561	0.4	Y	Y				218-01-9
		Dibenzo(a,h)anthracene	0.54		U	0.4	N	Y				53-70-3
		1,2-Dichlorobenzene	0.54		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.54		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.54		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.54		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.54		U	30	N	N				120-83-2
		Diethyl phthalate	0.54		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.54		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.54		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.54		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.54		U	0.9	N	N				121-14-2
		Fluoranthene	0.54		1.34	20	N	N				206-44-0
		Fluorene	0.54		U	28	N	N				86-73-7
		Hexachlorobenzene	0.54		U	0.4	N	Y				118-74-1
		Hexachlorobutadiene	0.54		U	8.2	N	N				87-68-3
		Hexachloroethane	0.54		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.54	J	0.376	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.54		U	123	N	N				91-57-6
		Naphthalene	0.54		U	54	N	N				91-20-3
		Pentachlorophenol	0.54		U	5.3	N	N				87-86-5
		Phenanthrene	0.54		0.763	40	N	N				85-01-8
		Phenol	0.54		U	6000	N	N				108-95-2
		Pyrene	0.54		1.13	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.54		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.54		U	330	N	N				95-95-4
		2,4,6- Trichlorophenol	0.54		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-41	Soil	Acenaphthene	0.64		U	43	N	N	11/11/2005	8270	55298-12	83-32-9
		Acenaphthylene	0.64		U	23	N	N				208-96-8
		Anthracene	0.64		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.64	J	0.534	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.64	J	0.478	0.4	Y	Y				50-32-8
		Benzo(b)fluoranthene	0.64	J	0.378	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.64		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.64	J	0.383	0.9	N	N				207-08-9
		1,1-Biphenyl	0.64		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.64		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.64		U	0.6	N	Y				111-44-4
		bis(2-chloroisopropyl)ether	0.64		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.64		U	310	N	N				106-47-8
		2-Chlorophenol	0.64		U	50	N	N				95-57-8
		Chrysene	0.64	J	0.492	0.4	Y	Y				218-01-9
		Dibenzo(a,h)anthracene	0.64		U	0.4	N	Y				53-70-3
		1,2-Dichlorobenzene	0.64		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.64		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.64		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.64		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.64		U	30	N	N				120-83-2
		Diethyl phthalate	0.64		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.64		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.64		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.64		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.64		U	0.9	N	N				121-14-2
		Fluoranthene	0.64		1.01	20	N	N				206-44-0
		Fluorene	0.64		U	28	N	N				86-73-7
		Hexachlorobenzene	0.64		U	0.4	N	Y				118-74-1
		Hexachlorobutadiene	0.64		U	8.2	N	N				87-68-3
		Hexachloroethane	0.64		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.64	J	0.377	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.64		U	123	N	N				91-57-6
		Naphthalene	0.64		U	54	N	N				91-20-3
		Pentachlorophenol	0.64		U	5.3	N	N				87-86-5
		Phenanthrene	0.64	J	0.554	40	N	N				85-01-8
		Phenol	0.64		U	6000	N	N				108-95-2
		Pyrene	0.64		0.959	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.64		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.64		U	330	N	N				95-95-4
		2,4,6- Trichlorophenol	0.64		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-34	Soil	Acenaphthene	0.34		U	43	N	N	11/15/2005	8270	55329-3	83-32-9
		Acenaphthylene	0.34		U	23	N	N				208-96-8
		Anthracene	0.34		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.34		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.34		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.34		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.34		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.34		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.34		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.34		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.34		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.34		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.34		U	310	N	N				106-47-8
		2-Chlorophenol	0.34		U	50	N	N				95-57-8
		Chrysene	0.34		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.34		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.34		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.34		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.34		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.34		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.34		U	30	N	N				120-83-2
		Diethyl phthalate	0.34		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.34		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.34		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.34		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.34		U	0.9	N	N				121-14-2
		Fluoranthene	0.34	J	0.271	20	N	N				206-44-0
		Fluorene	0.34		U	28	N	N				86-73-7
		Hexachlorobenzene	0.34		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.34		U	8.2	N	N				87-68-3
		Hexachloroethane	0.34		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.34		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.34		U	123	N	N				91-57-6
		Naphthalene	0.34		U	54	N	N				91-20-3
		Pentachlorophenol	0.34		U	5.3	N	N				87-86-5
		Phenanthrene	0.34		U	40	N	N				85-01-8
		Phenol	0.34		U	6000	N	N				108-95-2
		Pyrene	0.34	J	0.253	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.34		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.34		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.34		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-36	Soil	Acenaphthene	0.38		U	43	N	N	11/15/2005	8270	55329-4	83-32-9
		Acenaphthylene	0.38		U	23	N	N				208-96-8
		Anthracene	0.38		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.38		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.38		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.38		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.38		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.38		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.38		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.38		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.38		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.38		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.38		U	310	N	N				106-47-8
		2-Chlorophenol	0.38		U	50	N	N				95-57-8
		Chrysene	0.38		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.38		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.38		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.38		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.38		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.38		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.38		U	30	N	N				120-83-2
		Diethyl phthalate	0.38		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.38		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.38		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.38		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.38		U	0.9	N	N				121-14-2
		Fluoranthene	0.38		U	20	N	N				206-44-0
		Fluorene	0.38		U	28	N	N				86-73-7
		Hexachlorobenzene	0.38		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.38		U	8.2	N	N				87-68-3
		Hexachloroethane	0.38		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.38		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.38		U	123	N	N				91-57-6
		Naphthalene	0.38		U	54	N	N				91-20-3
		Pentachlorophenol	0.38		U	5.3	N	N				87-86-5
		Phenanthrene	0.38		U	40	N	N				85-01-8
		Phenol	0.38		U	6000	N	N				108-95-2
		Pyrene	0.38		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.38		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.38		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.38		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-37	Soil	Acenaphthene	0.35		U	43	N	N	11/15/2005	8270	55329-5	83-32-9
		Acenaphthylene	0.35		U	23	N	N				208-96-8
		Anthracene	0.35		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.35		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.35		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.35		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.35		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.35		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.35		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.35		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.35		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.35		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.35		U	310	N	N				106-47-8
		2-Chlorophenol	0.35		U	50	N	N				95-57-8
		Chrysene	0.35		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.35		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.35		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.35		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.35		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.35		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.35		U	30	N	N				120-83-2
		Diethyl phthalate	0.35		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.35		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.35		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.35		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.35		U	0.9	N	N				121-14-2
		Fluoranthene	0.35		U	20	N	N				206-44-0
		Fluorene	0.35		U	28	N	N				86-73-7
		Hexachlorobenzene	0.35		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.35		U	8.2	N	N				87-68-3
		Hexachloroethane	0.35		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.35		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.35		U	123	N	N				91-57-6
		Naphthalene	0.35		U	54	N	N				91-20-3
		Pentachlorophenol	0.35		U	5.3	N	N				87-86-5
		Phenanthrene	0.35		U	40	N	N				85-01-8
		Phenol	0.35		U	6000	N	N				108-95-2
		Pyrene	0.35		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.35		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.35		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.35		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-46	Soil	Acenaphthene	0.48		U	43	N	N	12/30/2005	8270	55627-1	83-32-9
		Acenaphthylene	0.48		U	23	N	N				208-96-8
		Anthracene	0.48		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.48		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.48		U	0.4	N	Y				50-32-8
		Benzo(b)fluoranthene	0.48		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.48		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.48		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.48		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.48		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.48		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.48		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.48		U	310	N	N				106-47-8
		2-Chlorophenol	0.48		U	50	N	N				95-57-8
		Chrysene	0.48		U	0.4	N	Y				218-01-9
		Dibenzo(a,h)anthracene	0.48		U	0.4	N	Y				53-70-3
		1,2-Dichlorobenzene	0.48		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.48		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.48		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.48		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.48		U	30	N	N				120-83-2
		Diethyl phthalate	0.48		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.48		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.48		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.48		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.48		U	0.9	N	N				121-14-2
		Fluoranthene	0.48		U	20	N	N				206-44-0
		Fluorene	0.48		U	28	N	N				86-73-7
		Hexachlorobenzene	0.48		U	0.4	N	Y				118-74-1
		Hexachlorobutadiene	0.48		U	8.2	N	N				87-68-3
		Hexachloroethane	0.48		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.48		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.48		U	123	N	N				91-57-6
		Naphthalene	0.48		U	54	N	N				91-20-3
		Pentachlorophenol	0.48		U	5.3	N	N				87-86-5
		Phenanthrene	0.48		U	40	N	N				85-01-8
		Phenol	0.48		U	6000	N	N				108-95-2
		Pyrene	0.48	J	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.48		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.48		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.48		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-44-1	Soil	Acenaphthene	0.5		U	43	N	N	12/30/2005	8270	55627-2	83-32-9
		Acenaphthylene	0.5		U	23	N	N				208-96-8
		Anthracene	0.5		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.5		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.5		U	0.4	N	Y				50-32-8
		Benzo(b)fluoranthene	0.5		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.5		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.5		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.5		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.5		0.669	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.5		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.5		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.5		U	310	N	N				106-47-8
		2-Chlorophenol	0.5		U	50	N	N				95-57-8
		Chrysene	0.5		U	0.4	N	Y				218-01-9
		Dibenzo(a,h)anthracene	0.5		U	0.4	N	Y				53-70-3
		1,2-Dichlorobenzene	0.5		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.5		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.5		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.5		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.5		U	30	N	N				120-83-2
		Diethyl phthalate	0.5		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.5		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.5		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.5		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.5		U	0.9	N	N				121-14-2
		Fluoranthene	0.5	J	0.289	20	N	N				206-44-0
		Fluorene	0.5		U	28	N	N				86-73-7
		Hexachlorobenzene	0.5		U	0.4	N	Y				118-74-1
		Hexachlorobutadiene	0.5		U	8.2	N	N				87-68-3
		Hexachloroethane	0.5		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.5		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.5		U	123	N	N				91-57-6
		Naphthalene	0.5		U	54	N	N				91-20-3
		Pentachlorophenol	0.5		U	5.3	N	N				87-86-5
		Phenanthrene	0.5		U	40	N	N				85-01-8
		Phenol	0.5		U	6000	N	N				108-95-2
		Pyrene	0.5		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.5		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.5		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.5		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-M19-S5	Soil	Acenaphthene	0.25		U	43	N	N	2/3/2006	8270	55810-1	83-32-9
		Acenaphthylene	0.25		U	23	N	N				208-96-8
		Anthracene	0.25		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.25		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.25		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.25		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.25		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.25		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.25		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.25		0.669	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.25		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.25		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.25		U	310	N	N				106-47-8
		2-Chlorophenol	0.25		U	50	N	N				95-57-8
		Chrysene	0.25		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.25		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.25		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.25		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.25		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.25		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.25		U	30	N	N				120-83-2
		Diethyl phthalate	0.25		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.25		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.25		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.25		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.25		U	0.9	N	N				121-14-2
		Fluoranthene	0.25	J	0.289	20	N	N				206-44-0
		Fluorene	0.25		U	28	N	N				86-73-7
		Hexachlorobenzene	0.25		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.25		U	8.2	N	N				87-68-3
		Hexachloroethane	0.25		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.25		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.25		U	123	N	N				91-57-6
		Naphthalene	0.25		U	54	N	N				91-20-3
		Pentachlorophenol	0.25		U	5.3	N	N				87-86-5
		Phenanthrene	0.25		U	40	N	N				85-01-8
		Phenol	0.25		U	6000	N	N				108-95-2
		Pyrene	0.25		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.25		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.25		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.25		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-M19-S11	Soil	Acenaphthene	0.33		U	43	N	N	2/3/2006	8270	55810-2	83-32-9
		Acenaphthylene	0.33		U	23	N	N				208-96-8
		Anthracene	0.33		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.33		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.33		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.33		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.33		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.33		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.33		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.33		0.669	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.33		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.33		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.33		U	310	N	N				106-47-8
		2-Chlorophenol	0.33		U	50	N	N				95-57-8
		Chrysene	0.33		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.33		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.33		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.33		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.33		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.33		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.33		U	30	N	N				120-83-2
		Diethyl phthalate	0.33		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.33		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.33		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.33		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.33		U	0.9	N	N				121-14-2
		Fluoranthene	0.33	J	0.289	20	N	N				206-44-0
		Fluorene	0.33		U	28	N	N				86-73-7
		Hexachlorobenzene	0.33		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.33		U	8.2	N	N				87-68-3
		Hexachloroethane	0.33		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.33		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.33		U	123	N	N				91-57-6
		Naphthalene	0.33		U	54	N	N				91-20-3
		Pentachlorophenol	0.33		U	5.3	N	N				87-86-5
		Phenanthrene	0.33		U	40	N	N				85-01-8
		Phenol	0.33		U	6000	N	N				108-95-2
		Pyrene	0.33		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.33		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.33		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.33		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-J17-S29	Soil	Acenaphthene	0.33		U	43	N	N	2/3/2006	8270	55810-3	83-32-9
		Acenaphthylene	0.33		U	23	N	N				208-96-8
		Anthracene	0.33		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.33		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.33		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.33		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.33		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.33		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.33		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.33		0.669	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.33		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.33		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.33		U	310	N	N				106-47-8
		2-Chlorophenol	0.33		U	50	N	N				95-57-8
		Chrysene	0.33		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.33		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.33		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.33		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.33		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.33		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.33		U	30	N	N				120-83-2
		Diethyl phthalate	0.33		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.33		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.33		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.33		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.33		U	0.9	N	N				121-14-2
		Fluoranthene	0.33	J	0.289	20	N	N				206-44-0
		Fluorene	0.33		U	28	N	N				86-73-7
		Hexachlorobenzene	0.33		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.33		U	8.2	N	N				87-68-3
		Hexachloroethane	0.33		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.33		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.33		U	123	N	N				91-57-6
		Naphthalene	0.33		U	54	N	N				91-20-3
		Pentachlorophenol	0.33		U	5.3	N	N				87-86-5
		Phenanthrene	0.33		U	40	N	N				85-01-8
		Phenol	0.33		U	6000	N	N				108-95-2
		Pyrene	0.33		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.33		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.33		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.33		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-J17-S19	Soil	Acenaphthene	0.43		U	43	N	N	2/3/2006	8270	55810-4	83-32-9
		Acenaphthylene	0.43		U	23	N	N				208-96-8
		Anthracene	0.43		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.43		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.43		U	0.4	N	Y				50-32-8
		Benzo(b)fluoranthene	0.43		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.43		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.43		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.43		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.43		0.669	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.43		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.43		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.43		U	310	N	N				106-47-8
		2-Chlorophenol	0.43		U	50	N	N				95-57-8
		Chrysene	0.43		U	0.4	N	Y				218-01-9
		Dibenzo(a,h)anthracene	0.43		U	0.4	N	Y				53-70-3
		1,2-Dichlorobenzene	0.43		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.43		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.43		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.43		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.43		U	30	N	N				120-83-2
		Diethyl phthalate	0.43		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.43		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.43		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.43		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.43		U	0.9	N	N				121-14-2
		Fluoranthene	0.43	J	0.289	20	N	N				206-44-0
		Fluorene	0.43		U	28	N	N				86-73-7
		Hexachlorobenzene	0.43		U	0.4	N	Y				118-74-1
		Hexachlorobutadiene	0.43		U	8.2	N	N				87-68-3
		Hexachloroethane	0.43		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.43		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.43		U	123	N	N				91-57-6
		Naphthalene	0.43		U	54	N	N				91-20-3
		Pentachlorophenol	0.43		U	5.3	N	N				87-86-5
		Phenanthrene	0.43		U	40	N	N				85-01-8
		Phenol	0.43		U	6000	N	N				108-95-2
		Pyrene	0.43		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.43		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.43		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.43		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-J17-S9	Soil	Acenaphthene	0.33		U	43	N	N	2/3/2006	8270	55810-5	83-32-9
		Acenaphthylene	0.33		U	23	N	N				208-96-8
		Anthracene	0.33		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.33		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.33		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.33		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.33		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.33		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.33		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.33		0.669	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.33		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.33		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.33		U	310	N	N				106-47-8
		2-Chlorophenol	0.33		U	50	N	N				95-57-8
		Chrysene	0.33		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.33		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.33		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.33		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.33		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.33		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.33		U	30	N	N				120-83-2
		Diethyl phthalate	0.33		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.33		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.33		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.33		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.33		U	0.9	N	N				121-14-2
		Fluoranthene	0.33	J	0.289	20	N	N				206-44-0
		Fluorene	0.33		U	28	N	N				86-73-7
		Hexachlorobenzene	0.33		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.33		U	8.2	N	N				87-68-3
		Hexachloroethane	0.33		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.33		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.33		U	123	N	N				91-57-6
		Naphthalene	0.33		U	54	N	N				91-20-3
		Pentachlorophenol	0.33		U	5.3	N	N				87-86-5
		Phenanthrene	0.33		U	40	N	N				85-01-8
		Phenol	0.33		U	6000	N	N				108-95-2
		Pyrene	0.33		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.33		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.33		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.33		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-TESTPIT04-SW1	Soil	Acenaphthene	0.4		U	43	N	N	2/25/2006	8270	55913-3	83-32-9
		Acenaphthylene	0.4		U	23	N	N				208-96-8
		Anthracene	0.4		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.4		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.4		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.4		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.4		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.4		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.4		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.4		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.4		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.4		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.4		U	310	N	N				106-47-8
		2-Chlorophenol	0.4		U	50	N	N				95-57-8
		Chrysene	0.4		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.4		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.4		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.4		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.4		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.4		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.4		U	30	N	N				120-83-2
		Diethyl phthalate	0.4		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.4		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.4		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.4		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.4		U	0.9	N	N				121-14-2
		Fluoranthene	0.4		U	20	N	N				206-44-0
		Fluorene	0.4		U	28	N	N				86-73-7
		Hexachlorobenzene	0.4		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.4		U	8.2	N	N				87-68-3
		Hexachloroethane	0.4		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.4		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.4		U	123	N	N				91-57-6
		Naphthalene	0.4		U	54	N	N				91-20-3
		Pentachlorophenol	0.4		U	5.3	N	N				87-86-5
		Phenanthrene	0.4		U	40	N	N				85-01-8
		Phenol	0.4		U	6000	N	N				108-95-2
		Pyrene	0.4		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.4		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.4		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.4		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-TESTPIT03-SW1	Soil	Acenaphthene	0.36		U	43	N	N	2/25/2006	8270	55913-4	83-32-9
		Acenaphthylene	0.36		U	23	N	N				208-96-8
		Anthracene	0.36		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.36		0.546	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.36		0.58	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene	0.36		0.62	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.36		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.36		0.658	0.9	N	N				207-08-9
		1,1-Biphenyl	0.36		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.36		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.36		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.36		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.36		U	310	N	N				106-47-8
		2-Chlorophenol	0.36		U	50	N	N				95-57-8
		Chrysene	0.36		0.6	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	0.36		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.36		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.36		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.36		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.36		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.36		U	30	N	N				120-83-2
		Diethyl phthalate	0.36		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.36		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.36		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.36		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.36		U	0.9	N	N				121-14-2
		Fluoranthene	0.36		0.855	20	N	N				206-44-0
		Fluorene	0.36		U	28	N	N				86-73-7
		Hexachlorobenzene	0.36		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.36		U	8.2	N	N				87-68-3
		Hexachloroethane	0.36		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.36		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.36		U	123	N	N				91-57-6
		Naphthalene	0.36		U	54	N	N				91-20-3
		Pentachlorophenol	0.36		U	5.3	N	N				87-86-5
		Phenanthrene	0.36		0.365	40	N	N				85-01-8
		Phenol	0.36		U	6000	N	N				108-95-2
		Pyrene	0.36		0.751	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.36		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.36		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.36		U	58	N	N				88-06-2

TABLE 7-38
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT LIMIT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-TESTPIT03-SW2	Soil	Acenaphthene	0.4		U	43	N	N	2/25/2006	8270	55913-5	83-32-9
		Acenaphthylene	0.4		U	23	N	N				208-96-8
		Anthracene	0.4		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.4		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.4	J	0.237	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.4	J	0.242	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.4		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.4	J	0.232	0.9	N	N				207-08-9
		1,1-Biphenyl	0.4		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.4		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.4		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.4		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.4		U	310	N	N				106-47-8
		2-Chlorophenol	0.4		U	50	N	N				95-57-8
		Chrysene	0.4	J	0.232	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.4		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.4		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.4		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.4		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.4		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.4		U	30	N	N				120-83-2
		Diethyl phthalate	0.4		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.4		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.4		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.4		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.4		U	0.9	N	N				121-14-2
		Fluoranthene	0.4	J	0.306	20	N	N				206-44-0
		Fluorene	0.4		U	28	N	N				86-73-7
		Hexachlorobenzene	0.4		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.4		U	8.2	N	N				87-68-3
		Hexachloroethane	0.4		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.4		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.4		U	123	N	N				91-57-6
		Naphthalene	0.4		U	54	N	N				91-20-3
		Pentachlorophenol	0.4		U	5.3	N	N				87-86-5
		Phenanthrene	0.4		U	40	N	N				85-01-8
		Phenol	0.4		U	6000	N	N				108-95-2
		Pyrene	0.4	J	0.292	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.4		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.4		U	330	N	N				95-95-4
		2,4,6-Trichlorophenol	0.4		U	58	N	N				88-06-2

TABLE 7-39
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Exploratory Dioxins/Furans Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-L-STRAIGHTDIS-52-S	Solid	1,2,3,4,6,7,8-HpCDD		190					10/7/2005	SW846 8290	55924-7	35822-46-9
	Solid	1,2,3,4,6,7,8-HpCDF		17								67562-39-4
	Solid	1,2,3,4,7,8,9-HpCDF	ND	2.1								55673-89-7
	Solid	1,2,3,4,7,8-HxCDD	ND	3.8								39227-28-6
	Solid	1,2,3,4,7,8-HxCDF	J	6.4								70648-26-9
	Solid	1,2,3,6,7,8-HxCDD	J	5.6								57653-85-7
	Solid	1,2,3,6,7,8-HxCDF	ND	3.5								57117-44-9
	Solid	1,2,3,7,8,9-HxCDD	ND	4.7								19408-74-3
	Solid	1,2,3,7,8,9-HxCDF	ND	0.41								72918-21-9
	Solid	1,2,3,7,8-PeCDD	ND	1.2								40321-76-4
	Solid	1,2,3,7,8-PeCDF	ND	2.6								57117-41-6
	Solid	2,3,4,6,7,8-HxCDF	ND	2								60851-34-5
	Solid	2,3,4,7,8-PeCDF	ND	3.4								57117-31-4
	Solid	2,3,7,8-TCDD	ND	0.82								1746-01-6
	Solid	2,3,7,8-TCDF	CON	5.1								51207-31-9
	Solid	OCDD	E	20000								3268-87-9
	Solid	OCDF		33								39001-02-0
	Solid	Total HpCDDs		450								37871-00-4
	Solid	Total HpCDFs		29								38998-75-3
	Solid	Total HxCDDs		73								34465-46-8
	Solid	Total HxCDFs		53								55684-94-1
	Solid	Total PeCDDs		7.4								36088-22-9
	Solid	Total PeCDFs		41								30402-15-4
	Solid	Total TCDDs		28								41903-57-5
	Solid	Total TCDFs		79								55722-27-5
	2,3,7,8-TCDD Toxicity Equivalents*			8.4	3.9	Y						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-40
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory TPH Analytical Data

TF4-C-STRAIGHTDIS-F14	Soil	TPH	140	851	500	Y	N	1/18/2006	55714-11RX	TPH
TF4-C-STRAIGHTDIS-J14	Soil	TPH	26	34	500	N	N	1/13/2006	55714-1	TPH, SVOCs
TF4-C-STRAIGHTDIS-J15	Soil	TPH	24	U	500	N	N	1/13/2006	55714-2	TPH, SVOCs
TF4-C-STRAIGHTDIS-I14	Soil	TPH	26	U	500	N	N	1/13/2006	55714-3	TPH, SVOCs
TF4-C-STRAIGHTDIS-H14	Soil	TPH	26	U	500	N	N	1/13/2006	55714-4	TPH, SVOCs
TF4-C-STRAIGHTDIS-G13	Soil	TPH	24	U	500	N	N	1/13/2006	55714-5	TPH, SVOCs
TF4-C-STRAIGHTDIS-G14	Soil	TPH	24	U	500	N	N	1/13/2006	55714-6	TPH, SVOCs
TF4-C-STRAIGHTDIS-H15	Soil	TPH	26	37	500	N	N	1/13/2006	55714-7	TPH, SVOCs
TF4-C-STRAIGHTDIS-F13	Soil	TPH	26	U	500	N	N	1/13/2006	55714-8	TPH, SVOCs
TF4-C-STRAIGHTDIS-I15	Soil	TPH	30	54	500	N	N	1/14/2006	55714-9	TPH, SVOCs
TF4-C-STRAIGHTDIS-E13	Soil	TPH	24	U	500	N	N	1/14/2006	55714-10	TPH, SVOCs
TF4-C-STRAIGHTDIS-G15	Soil	TPH	26	U	500	N	N	1/14/2006	55714-12	TPH, SVOCs
TF4-C-STRAIGHTDIS-L17	Soil	TPH	34	68	500	N	N	1/22/2006	55762-1	TPH, SVOCs
TF4-C-STRAIGHTDIS-K17	Soil	TPH	360	1310	500	Y	N	1/23/2006	55762-2	TPH
TF4-C-STRAIGHTDIS-K16	Soil	TPH	30	322	500	N	N	1/23/2006	55762-3	TPH, SVOCs
TF4-C-STRAIGHTDIS-F12	Soil	TPH	26	U	500	N	N	1/23/2006	55762-4	TPH, SVOCs
TF4-C-STRAIGHTDIS-E12	Soil	TPH	26	U	500	N	N	1/23/2006	55762-5	TPH, SVOCs
TF4-C-STRAIGHTDIS-D12	Soil	TPH	28	43	500	N	N	1/23/2006	55762-6	TPH, SVOCs
TF4-C-STRAIGHTDIS-D11	Soil	TPH	26	187	500	N	N	1/23/2006	55762-7	TPH, SVOCs
TF4-C-STRAIGHTDIS-C11	Soil	TPH	28	U	500	N	N	1/23/2006	55762-8	TPH, SVOCs
TF4-C-STRAIGHTDIS-F15	Soil	TPH	24	U	500	N	N	1/22/2006	55742-1	TPH, SVOCs
TF4-C-STRAIGHTDIS-G15 (repeat ID)	Soil	TPH	26	31	500	N	N	1/22/2006	55742-2	TPH, SVOCs
TF4-C-STRAIGHTDIS-G15D	Soil	TPH	24	U	500	N	N	1/22/2006	55742-3	TPH, SVOCs
TF4-C-STRAIGHTDIS-H16	Soil	TPH	32	54	500	N	N	1/22/2006	55742-4	TPH, SVOCs
TF4-C-STRAIGHTDIS-I16	Soil	TPH	32	134	500	N	N	1/22/2006	55742-5	TPH, SVOCs
TF4-C-STRAIGHTDIS-J16	Soil	TPH	36	85	500	N	N	1/22/2006	55742-6	TPH, SVOCs

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D3-A	Acenaphthene	300	0.3		U	U	43	N	N	9/17/2005	8270	54906-1	83-32-9	TPH,SVOC,D/F
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C5	Acenaphthene	340	0.34		U	U	43	N	N	9/20/2005	SW8270	54906-2	83-32-9	TPH,SVOC,D/F
	Acenaphthylene	340	0.34		U	U	23	N	N				208-96-8	
	Anthracene	340	0.34		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	340	0.34		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	340	0.34		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	340	0.34		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	340	0.34		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	340	0.34		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	340	0.34		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	340	0.34		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	340	0.34		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	340	0.34		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	340	0.34		U	U	310	N	N				106-47-8	
	2-Chlorophenol	340	0.34		U	U	50	N	N				95-57-8	
	Chrysene	340	0.34		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	340	0.34		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	340	0.34		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	340	0.34		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	340	0.34		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	340	0.34		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	340	0.34		U	U	30	N	N				120-83-2	
	Diethyl phthalate	340	0.34		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	340	0.34		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	340	0.34		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	340	0.34		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	340	0.34		U	U	0.9	N	N				121-14-2	
	Fluoranthene	340	0.34		U	U	20	N	N				206-44-0	
	Fluorene	340	0.34		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	340	0.34		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	340	0.34		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	340	0.34		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	340	0.34		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	340	0.34		U	U	123	N	N				91-57-6	
	Naphthalene	340	0.34		U	U	54	N	N				91-20-3	
	Pentachlorophenol	340	0.34		U	U	5.3	N	N				87-86-5	
	Phenanthrene	340	0.34		U	U	40	N	N				85-01-8	
	Phenol	340	0.34		U	U	6000	N	N				108-95-2	
	Pyrene	340	0.34		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	340	0.34		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	340	0.34		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	340	0.34		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D1-S	Acenaphthene	280	0.28		U	U	43	N	N	9/17/2005	SW8270	54906-3	83-32-9	TPH,SVOC
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C2-S	Acenaphthene	300	0.3		U	U	43	N	N	9/20/2005	8270	54906-4	83-32-9	TPH, SVOC
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-B3	Acenaphthene	280	0.28		U	U	43	N	N	9/17/2005	SW8270	54906-5	83-32-9	TPH, SVOC
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-B5-S	Acenaphthene	300	0.3		U	U	43	N	N	9/20/2005	SW8270	54906-6	83-32-9	TPH, SVOC
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3	J	150	0.15	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3	J	190	0.19	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3	J	252	0.252	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		307	0.307	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-B7	Acenaphthene	290	0.29	U		0	43	N	N	9/20/2005	8270	54906-7	83-32-9	TPH, SVOC
	Acenaphthylene	290	0.29	U		0	23	N	N				208-96-8	
	Anthracene	290	0.29	U		0	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29	U		0	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29	U		0	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29	U		0	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29	U		0	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29	U		0	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29	U		0	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29	U		0	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29	U		0	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29	U		0	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29	U		0	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29	U		0	50	N	N				95-57-8	
	Chrysene	290	0.29	U		0	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29	U		0	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29	U		0	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29	U		0	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29	U		0	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29	U		0	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29	U		0	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29	U		0	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29	U		0	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29	U		0	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29	U		0	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29	U		0	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29	U		0	20	N	N				206-44-0	
	Fluorene	290	0.29	U		0	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29	U		0	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29	U		0	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29	U		0	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29	U		0	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29	U		0	123	N	N				91-57-6	
	Naphthalene	290	0.29	U		0	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29	U		0	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29	U		0	40	N	N				85-01-8	
	Phenol	290	0.29	U		0	6000	N	N				108-95-2	
	Pyrene	290	0.29	U		0	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29	U		0	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29	U		0	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29	U		0	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C2	Acenaphthene	300	0.3	U		0	43	N	N	9/17/2005	SW8270	54906-8	83-32-9	TPH, SVOC
	Acenaphthylene	300	0.3	U		0	23	N	N				208-96-8	
	Anthracene	300	0.3	U		0	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3	U		0	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3	U		0	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3	U		0	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3	U		0	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3	U		0	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3	U		0	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3	U		0	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3	U		0	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3	U		0	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3	U		0	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3	U		0	50	N	N				95-57-8	
	Chrysene	300	0.3	U		0	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3	U		0	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3	U		0	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3	U		0	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3	U		0	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3	U		0	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3	U		0	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3	U		0	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3	U		0	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3	U		0	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3	U		0	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3	U		0	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3	U		0	20	N	N				206-44-0	
	Fluorene	300	0.3	U		0	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3	U		0	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3	U		0	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3	U		0	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3	U		0	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3	U		0	123	N	N				91-57-6	
	Naphthalene	300	0.3	U		0	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3	U		0	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3	U		0	40	N	N				85-01-8	
	Phenol	300	0.3	U		0	6000	N	N				108-95-2	
	Pyrene	300	0.3	U		0	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3	U		0	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3	U		0	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3	U		0	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-B4	Acenaphthene	310	0.31		U	U	43	N	N	9/20/2005	SW8270	54906-9	83-32-9	TPH, SVOC
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D1	Acenaphthene	290	0.29		U	U	43	N	N	9/17/2005	8270	54906-11	83-32-9	TPH, SVOC
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D2	Acenaphthene	310	0.31		U	U	43	N	N	9/17/2005	SW8270	54906-12	83-32-9	TPH, SVOC
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C4	Acenaphthene	330	0.33		U	U	43	N	N	9/20/2005	SW8270	54906-13	83-32-9	TPH, SVOC
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C8	Acenaphthene	310	0.31		U	U	43	N	N	9/20/2005	8270	54906-14	83-32-9	TPH, SVOC
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D4	Acenaphthene	320	0.32		U	U	43	N	N	9/20/2005	SW8270	54906-15	83-32-9	TPH, SVOC
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D6	Acenaphthene	310	0.31		U	U	43	N	N	9/20/2005	SW8270	54906-16	83-32-9	TPH, SVOC
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D5	Acenaphthene	320	0.32		U	U	43	N	N	9/20/2005	SW8270	54906-17	83-32-9	TPH, SVOC
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E3	Acenaphthene	300	0.3		U	U	43	N	N	9/20/2005	SW8270	54906-18	83-32-9	TPH, SVOC
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E4	Acenaphthene	290	0.29		U	U	43	N	N	9/20/2005	SW8270	54906-19	83-32-9	TPH, SVOC
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E5	Acenaphthene	310	0.31		U	U	43	N	N	9/20/2005	SW8270	54906-20	83-32-9	TPH, SVOC
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E2	Acenaphthene	290	0.29		U	U	43	N	N	9/27/2005	SW8270	54949-1	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F2	Acenaphthene	320	0.32		U	U	43	N	N	9/27/2005	SW8270	54949-2	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F3	Acenaphthene	310	0.31		U	U	43	N	N	9/27/2005	SW8270	54949-3	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31	J	164	0.164	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F3DUP	Acenaphthene	300	0.3	U	U	U	43	N	N	9/27/2005	SW8270	54949-4	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3	J	176	0.176	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3	J	184	0.184	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3	J	272	0.272	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F4	Acenaphthene	310	0.31		U	U	43	N	N	9/27/2005	SW8270	54949-5	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F5	Acenaphthene	300	0.3		U	U	43	N	N	9/27/2005	SW8270	54949-6	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G4	Acenaphthene	320	0.32		U	U	43	N	N	9/27/2005	SW8270	54949-7	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		176	0.176	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		184	0.184	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		272	0.272	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G5	Acenaphthene	320	0.32	J	173	0.173	43	N	N	9/27/2005	SW8270	54949-8	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		397	0.397	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		1230	1.23	0.9	Y	N				56-55-3	
	Benzo(a)pyrene	320	0.32		1030	1.03	0.4	Y	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		1070	1.07	0.9	Y	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		367	0.367	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		911	0.911	0.9	Y	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		1230	1.23	0.4	Y	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		2290	2.29	20	N	N				206-44-0	
	Fluorene	320	0.32	J	176	0.176	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		485	0.485	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		1430	1.43	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		1780	1.78	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G6	Acenaphthene	310	0.31		U	U	43	N	N	9/28/2005	SW8270	54949-9	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G7	Acenaphthene	320	0.32		U	U	43	N	N	9/28/2005	SW8270	54949-10	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H5	Acenaphthene	320	0.32		U	U	43	N	N	9/27/2005	SW8270	54949-11	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H6	Acenaphthene	310	0.31		U	U	43	N	N	9/27/2005	SW8270	54949-12	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H7	Acenaphthene	320	0.32		U	U	43	N	N	9/28/2005	SW8270	54949-13	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-16	Acenaphthene	330	0.33		U	U	43	N	N	9/28/2005	SW8270	54949-14	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-I7	Acenaphthene	320	0.32		U	U	43	N	N	9/27/2005	SW8270	54949-15	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J6	Acenaphthene	300	0.3		U	U	43	N	N	9/28/2005	SW8270	54949-16	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J7	Acenaphthene	290	0.29		U	U	43	N	N	9/27/2005	SW8270	54949-17	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K6	Acenaphthene	280	0.28		U	U	43	N	N	9/27/2005	SW8270	54949-18	83-32-9	TPH, SVOCs
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K7	Acenaphthene	290	0.29		U	U	43	N	N	9/27/2005	SW8270	54949-19	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-I5	Acenaphthene	290	0.29		U	U	43	N	N	9/29/2005	SW8270	54956-1	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J5	Acenaphthene	300	0.3		U	U	43	N	N	9/29/2005	SW8270	54956-2	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J5DUP	Acenaphthene	290	0.29		U	U	43	N	N	9/29/2005	SW8270	54956-3	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K5	Acenaphthene	290	0.29		U	U	43	N	N	9/29/2005	SW8270	54956-4	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E6	Acenaphthene	320	0.32		U	U	43	N	N	9/29/2005	SW8270	54956-5	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F6	Acenaphthene	310	0.31		U	U	43	N	N	9/29/2005	SW8270	54956-6	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F7	Acenaphthene	320	0.32		U	U	43	N	N	9/29/2005	SW8270	54956-7	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32	J	170	0.17	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32	J	162	0.162	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G8	Acenaphthene	320	0.32		U	U	43	N	N	9/29/2005	SW8270	54956-8	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H8	Acenaphthene	290	0.29		U	U	43	N	N	9/29/2005	SW8270	54956-9	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J8	Acenaphthene	290	0.29		U	U	43	N	N	9/29/2005	SW8270	54956-10	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F2-S	Acenaphthene	300	0.3		U	U	43	N	N	10/5/2005	SW8270	55013-1	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3	J	221	0.221	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3	J	182	0.182	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3	J	195	0.195	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3	J	197	0.197	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3	J	254	0.254	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		385	0.385	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3	J	153	0.153	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		333	0.333	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G3-S	Acenaphthene	280	0.28		U	U	43	N	N	10/5/2005	SW8270	55013-2	83-32-9	TPH, SVOCs
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K7-S	Acenaphthene	310	0.31		U	U	43	N	N	11/15/2005	SW8270	55329-1	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K9-S	Acenaphthene	320	0.32		U	U	43	N	N	11/15/2005	SW8270	55329-2	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-L11-S	Acenaphthene	390	0.39		U	U	43	N	N	11/11/2005	SW8270	55298-1	83-32-9	TPH, SVOCs
	Acenaphthylene	390	0.39		U	U	23	N	N				208-96-8	
	Anthracene	390	0.39		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	390	0.39		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	390	0.39		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	390	0.39		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	390	0.39		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	390	0.39		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	390	0.39		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	390	0.39		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	390	0.39		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	390	0.39		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	390	0.39		U	U	310	N	N				106-47-8	
	2-Chlorophenol	390	0.39		U	U	50	N	N				95-57-8	
	Chrysene	390	0.39		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	390	0.39		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	390	0.39		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	390	0.39		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	390	0.39		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	390	0.39		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	390	0.39		U	U	30	N	N				120-83-2	
	Diethyl phthalate	390	0.39		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	390	0.39		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	390	0.39		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	390	0.39		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	390	0.39		U	U	0.9	N	N				121-14-2	
	Fluoranthene	390	0.39		U	U	20	N	N				206-44-0	
	Fluorene	390	0.39		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	390	0.39		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	390	0.39		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	390	0.39		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	390	0.39		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	390	0.39		U	U	123	N	N				91-57-6	
	Naphthalene	390	0.39		U	U	54	N	N				91-20-3	
	Pentachlorophenol	390	0.39		U	U	5.3	N	N				87-86-5	
	Phenanthrene	390	0.39		U	U	40	N	N				85-01-8	
	Phenol	390	0.39		U	U	6000	N	N				108-95-2	
	Pyrene	390	0.39		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	390	0.39		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	390	0.39		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	390	0.39		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-M13-S	Acenaphthene	390	0.39		U	U	43	N	N	11/11/2005	SW8270	55298-2	83-32-9	TPH, SVOCs
	Acenaphthylene	390	0.39		U	U	23	N	N				208-96-8	
	Anthracene	390	0.39		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	390	0.39		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	390	0.39		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	390	0.39		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	390	0.39		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	390	0.39		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	390	0.39		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	390	0.39		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	390	0.39		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	390	0.39		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	390	0.39		U	U	310	N	N				106-47-8	
	2-Chlorophenol	390	0.39		U	U	50	N	N				95-57-8	
	Chrysene	390	0.39		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	390	0.39		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	390	0.39		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	390	0.39		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	390	0.39		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	390	0.39		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	390	0.39		U	U	30	N	N				120-83-2	
	Diethyl phthalate	390	0.39		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	390	0.39		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	390	0.39		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	390	0.39		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	390	0.39		U	U	0.9	N	N				121-14-2	
	Fluoranthene	390	0.39		U	U	20	N	N				206-44-0	
	Fluorene	390	0.39		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	390	0.39		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	390	0.39		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	390	0.39		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	390	0.39		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	390	0.39		U	U	123	N	N				91-57-6	
	Naphthalene	390	0.39		U	U	54	N	N				91-20-3	
	Pentachlorophenol	390	0.39		U	U	5.3	N	N				87-86-5	
	Phenanthrene	390	0.39		U	U	40	N	N				85-01-8	
	Phenol	390	0.39		U	U	6000	N	N				108-95-2	
	Pyrene	390	0.39		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	390	0.39		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	390	0.39		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	390	0.39		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-35	Acenaphthene	340	0.34		U	U	43	N	N	12/22/2005	SW8270	55582-2	83-32-9	TPH, SVOCs
	Acenaphthylene	340	0.34		U	U	23	N	N				208-96-8	
	Anthracene	340	0.34		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	340	0.34		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	340	0.34	J	225	0.225	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	340	0.34		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	340	0.34		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	340	0.34		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	340	0.34		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	340	0.34		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	340	0.34		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	340	0.34		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	340	0.34		U	U	310	N	N				106-47-8	
	2-Chlorophenol	340	0.34		U	U	50	N	N				95-57-8	
	Chrysene	340	0.34		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	340	0.34		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	340	0.34		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	340	0.34		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	340	0.34		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	340	0.34		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	340	0.34		U	U	30	N	N				120-83-2	
	Diethyl phthalate	340	0.34		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	340	0.34		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	340	0.34		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	340	0.34		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	340	0.34		U	U	0.9	N	N				121-14-2	
	Fluoranthene	340	0.34		U	U	20	N	N				206-44-0	
	Fluorene	340	0.34		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	340	0.34		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	340	0.34		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	340	0.34		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	340	0.34		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	340	0.34		U	U	123	N	N				91-57-6	
	Naphthalene	340	0.34		U	U	54	N	N				91-20-3	
	Pentachlorophenol	340	0.34		U	U	5.3	N	N				87-86-5	
	Phenanthrene	340	0.34		U	U	40	N	N				85-01-8	
	Phenol	340	0.34		U	U	6000	N	N				108-95-2	
	Pyrene	340	0.34		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	340	0.34		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	340	0.34		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	340	0.34		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-38	Acenaphthene	380	0.38		U	U	43	N	N	12/22/2005	SW8270	55582-1	83-32-9	TPH, SVOCs
	Acenaphthylene	380	0.38		U	U	23	N	N				208-96-8	
	Anthracene	380	0.38		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	380	0.38		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	380	0.38		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	380	0.38		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	380	0.38		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	380	0.38		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	380	0.38		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	380	0.38		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	380	0.38		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	380	0.38		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	380	0.38		U	U	310	N	N				106-47-8	
	2-Chlorophenol	380	0.38		U	U	50	N	N				95-57-8	
	Chrysene	380	0.38		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	380	0.38		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	380	0.38		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	380	0.38		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	380	0.38		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	380	0.38		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	380	0.38		U	U	30	N	N				120-83-2	
	Diethyl phthalate	380	0.38		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	380	0.38		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	380	0.38		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	380	0.38		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	380	0.38		U	U	0.9	N	N				121-14-2	
	Fluoranthene	380	0.38		U	U	20	N	N				206-44-0	
	Fluorene	380	0.38		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	380	0.38		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	380	0.38		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	380	0.38		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	380	0.38		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	380	0.38		U	U	123	N	N				91-57-6	
	Naphthalene	380	0.38		U	U	54	N	N				91-20-3	
	Pentachlorophenol	380	0.38		U	U	5.3	N	N				87-86-5	
	Phenanthrene	380	0.38		U	U	40	N	N				85-01-8	
	Phenol	380	0.38		U	U	6000	N	N				108-95-2	
	Pyrene	380	0.38		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	380	0.38		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	380	0.38		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	380	0.38		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-I13	Acenaphthene	310	0.31		U	U	43	N	N	12/29/2005	SW8270	55624-1	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H13	Acenaphthene	360	0.36		U	U	43	N	N	12/29/2005	SW8270	55624-2	83-32-9	TPH, SVOCs
	Acenaphthylene	360	0.36		U	U	23	N	N				208-96-8	
	Anthracene	360	0.36		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	360	0.36		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	360	0.36		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	360	0.36		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	360	0.36		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	360	0.36		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	360	0.36		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	360	0.36		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	360	0.36		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	360	0.36		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	360	0.36		U	U	310	N	N				106-47-8	
	2-Chlorophenol	360	0.36		U	U	50	N	N				95-57-8	
	Chrysene	360	0.36		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	360	0.36		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	360	0.36		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	360	0.36		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	360	0.36		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	360	0.36		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	360	0.36		U	U	30	N	N				120-83-2	
	Diethyl phthalate	360	0.36		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	360	0.36		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	360	0.36		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	360	0.36		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	360	0.36		U	U	0.9	N	N				121-14-2	
	Fluoranthene	360	0.36		U	U	20	N	N				206-44-0	
	Fluorene	360	0.36		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	360	0.36		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	360	0.36		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	360	0.36		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	360	0.36		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	360	0.36		U	U	123	N	N				91-57-6	
	Naphthalene	360	0.36		U	U	54	N	N				91-20-3	
	Pentachlorophenol	360	0.36		U	U	5.3	N	N				87-86-5	
	Phenanthrene	360	0.36		U	U	40	N	N				85-01-8	
	Phenol	360	0.36		U	U	6000	N	N				108-95-2	
	Pyrene	360	0.36		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	360	0.36		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	360	0.36		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	360	0.36		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H12	Acenaphthene	300	0.3		U	U	43	N	N	12/29/2005	SW8270	55624-3	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-I12	Acenaphthene	350	0.35		U	U	43	N	N	12/29/2005	SW8270	55624-4	83-32-9	TPH, SVOCs
	Acenaphthylene	350	0.35		U	U	23	N	N				208-96-8	
	Anthracene	350	0.35		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	350	0.35		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	350	0.35		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	350	0.35		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	350	0.35		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	350	0.35		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	350	0.35		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	350	0.35		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	350	0.35		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	350	0.35		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	350	0.35		U	U	310	N	N				106-47-8	
	2-Chlorophenol	350	0.35		U	U	50	N	N				95-57-8	
	Chrysene	350	0.35		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	350	0.35		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	350	0.35		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	350	0.35		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	350	0.35		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	350	0.35		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	350	0.35		U	U	30	N	N				120-83-2	
	Diethyl phthalate	350	0.35		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	350	0.35		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	350	0.35		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	350	0.35		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	350	0.35		U	U	0.9	N	N				121-14-2	
	Fluoranthene	350	0.35		U	U	20	N	N				206-44-0	
	Fluorene	350	0.35		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	350	0.35		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	350	0.35		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	350	0.35		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	350	0.35		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	350	0.35		U	U	123	N	N				91-57-6	
	Naphthalene	350	0.35		U	U	54	N	N				91-20-3	
	Pentachlorophenol	350	0.35		U	U	5.3	N	N				87-86-5	
	Phenanthrene	350	0.35		U	U	40	N	N				85-01-8	
	Phenol	350	0.35		U	U	6000	N	N				108-95-2	
	Pyrene	350	0.35		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	350	0.35		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	350	0.35		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	350	0.35		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-I11	Acenaphthene	330	0.33		U	U	43	N	N	12/29/2005	SW8270	55624-5	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H11	Acenaphthene	330	0.33		U	U	43	N	N	12/29/2005	SW8270	55624-6	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H11-D	Acenaphthene	350	0.35		U	U	43	N	N	12/29/2005	SW8270	55624-7	83-32-9	TPH, SVOCs
	Acenaphthylene	350	0.35		U	U	23	N	N				208-96-8	
	Anthracene	350	0.35		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	350	0.35		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	350	0.35		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	350	0.35		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	350	0.35		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	350	0.35		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	350	0.35		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	350	0.35		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	350	0.35		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	350	0.35		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	350	0.35		U	U	310	N	N				106-47-8	
	2-Chlorophenol	350	0.35		U	U	50	N	N				95-57-8	
	Chrysene	350	0.35		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	350	0.35		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	350	0.35		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	350	0.35		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	350	0.35		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	350	0.35		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	350	0.35		U	U	30	N	N				120-83-2	
	Diethyl phthalate	350	0.35		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	350	0.35		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	350	0.35		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	350	0.35		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	350	0.35		U	U	0.9	N	N				121-14-2	
	Fluoranthene	350	0.35		U	U	20	N	N				206-44-0	
	Fluorene	350	0.35		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	350	0.35		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	350	0.35		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	350	0.35		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	350	0.35		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	350	0.35		U	U	123	N	N				91-57-6	
	Naphthalene	350	0.35		U	U	54	N	N				91-20-3	
	Pentachlorophenol	350	0.35		U	U	5.3	N	N				87-86-5	
	Phenanthrene	350	0.35		U	U	40	N	N				85-01-8	
	Phenol	350	0.35		U	U	6000	N	N				108-95-2	
	Pyrene	350	0.35		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	350	0.35		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	350	0.35		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	350	0.35		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-I10	Acenaphthene	310	0.31		U	U	43	N	N	12/29/2005	SW8270	55624-8	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H10	Acenaphthene	320	0.32		U	U	43	N	N	12/29/2005	SW8270	55624-9	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H9	Acenaphthene	300	0.3		U	U	43	N	N	12/29/2005	SW8270	55624-10	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-55-S	Acenaphthene	430	0.43		U	U	43	N	N	1/18/2006	SW8270	55706-1	83-32-9	TPH, SVOCs
	Acenaphthylene	430	0.43		U	U	23	N	N				208-96-8	
	Anthracene	430	0.43		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	430	0.43		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	430	0.43		U	U	0.4	N	Y				50-32-8	
	Benzo(b)fluoranthene	430	0.43		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	430	0.43		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	430	0.43		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	430	0.43		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	430	0.43		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	430	0.43		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	430	0.43		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	430	0.43		U	U	310	N	N				106-47-8	
	2-Chlorophenol	430	0.43		U	U	50	N	N				95-57-8	
	Chrysene	430	0.43		U	U	0.4	N	Y				218-01-9	
	Dibenzo(a,h)anthracene	430	0.43		U	U	0.4	N	Y				53-70-3	
	1,2-Dichlorobenzene	430	0.43		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	430	0.43		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	430	0.43		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	430	0.43		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	430	0.43		U	U	30	N	N				120-83-2	
	Diethyl phthalate	430	0.43		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	430	0.43		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	430	0.43		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	430	0.43		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	430	0.43		U	U	0.9	N	N				121-14-2	
	Fluoranthene	430	0.43		U	U	20	N	N				206-44-0	
	Fluorene	430	0.43		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	430	0.43		U	U	0.4	N	Y				118-74-1	
	Hexachlorobutadiene	430	0.43		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	430	0.43		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	430	0.43		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	430	0.43		U	U	123	N	N				91-57-6	
	Naphthalene	430	0.43		U	U	54	N	N				91-20-3	
	Pentachlorophenol	430	0.43		U	U	5.3	N	N				87-86-5	
	Phenanthrene	430	0.43		U	U	40	N	N				85-01-8	
	Phenol	430	0.43		U	U	6000	N	N				108-95-2	
	Pyrene	430	0.43		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	430	0.43		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	430	0.43		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	430	0.43		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-47	Acenaphthene	340	0.34		U	U	43	N	N	1/10/2006	SW8270	55662-3	83-32-9	TPH, SVOCs
	Acenaphthylene	340	0.34		U	U	23	N	N				208-96-8	
	Anthracene	340	0.34		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	340	0.34		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	340	0.34		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	340	0.34		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	340	0.34		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	340	0.34		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	340	0.34		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	340	0.34		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	340	0.34		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	340	0.34		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	340	0.34		U	U	310	N	N				106-47-8	
	2-Chlorophenol	340	0.34		U	U	50	N	N				95-57-8	
	Chrysene	340	0.34		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	340	0.34		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	340	0.34		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	340	0.34		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	340	0.34		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	340	0.34		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	340	0.34		U	U	30	N	N				120-83-2	
	Diethyl phthalate	340	0.34		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	340	0.34		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	340	0.34		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	340	0.34		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	340	0.34		U	U	0.9	N	N				121-14-2	
	Fluoranthene	340	0.34		U	U	20	N	N				206-44-0	
	Fluorene	340	0.34		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	340	0.34		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	340	0.34		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	340	0.34		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	340	0.34		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	340	0.34		U	U	123	N	N				91-57-6	
	Naphthalene	340	0.34		U	U	54	N	N				91-20-3	
	Pentachlorophenol	340	0.34		U	U	5.3	N	N				87-86-5	
	Phenanthrene	340	0.34		U	U	40	N	N				85-01-8	
	Phenol	340	0.34		U	U	6000	N	N				108-95-2	
	Pyrene	340	0.34		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	340	0.34		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	340	0.34		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	340	0.34		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-48	Acenaphthene	320	0.32		U	U	43	N	N	1/10/2006	SW8270	55662-4	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-49	Acenaphthene	300	0.3		U	U	43	N	N	1/10/2006	SW8270	55662-5	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-50	Acenaphthene	340	0.34		U	U	43	N	N	1/10/2006	SW8270	55662-6	83-32-9	TPH, SVOCs
	Acenaphthylene	340	0.34		U	U	23	N	N				208-96-8	
	Anthracene	340	0.34		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	340	0.34		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	340	0.34		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	340	0.34		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	340	0.34		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	340	0.34		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	340	0.34		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	340	0.34		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	340	0.34		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	340	0.34		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	340	0.34		U	U	310	N	N				106-47-8	
	2-Chlorophenol	340	0.34		U	U	50	N	N				95-57-8	
	Chrysene	340	0.34		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	340	0.34		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	340	0.34		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	340	0.34		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	340	0.34		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	340	0.34		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	340	0.34		U	U	30	N	N				120-83-2	
	Diethyl phthalate	340	0.34		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	340	0.34		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	340	0.34		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	340	0.34		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	340	0.34		U	U	0.9	N	N				121-14-2	
	Fluoranthene	340	0.34		U	U	20	N	N				206-44-0	
	Fluorene	340	0.34		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	340	0.34		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	340	0.34		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	340	0.34		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	340	0.34		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	340	0.34		U	U	123	N	N				91-57-6	
	Naphthalene	340	0.34		U	U	54	N	N				91-20-3	
	Pentachlorophenol	340	0.34		U	U	5.3	N	N				87-86-5	
	Phenanthrene	340	0.34		U	U	40	N	N				85-01-8	
	Phenol	340	0.34		U	U	6000	N	N				108-95-2	
	Pyrene	340	0.34		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	340	0.34		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	340	0.34		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	340	0.34		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-51	Acenaphthene	350	0.35		U	U	43	N	N	1/10/2006	SW8270	55662-7	83-32-9	TPH, SVOCs
	Acenaphthylene	350	0.35		U	U	23	N	N				208-96-8	
	Anthracene	350	0.35		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	350	0.35		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	350	0.35		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	350	0.35		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	350	0.35		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	350	0.35		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	350	0.35		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	350	0.35		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	350	0.35		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	350	0.35		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	350	0.35		U	U	310	N	N				106-47-8	
	2-Chlorophenol	350	0.35		U	U	50	N	N				95-57-8	
	Chrysene	350	0.35		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	350	0.35		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	350	0.35		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	350	0.35		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	350	0.35		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	350	0.35		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	350	0.35		U	U	30	N	N				120-83-2	
	Diethyl phthalate	350	0.35		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	350	0.35		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	350	0.35		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	350	0.35		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	350	0.35		U	U	0.9	N	N				121-14-2	
	Fluoranthene	350	0.35		U	U	20	N	N				206-44-0	
	Fluorene	350	0.35		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	350	0.35		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	350	0.35		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	350	0.35		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	350	0.35		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	350	0.35		U	U	123	N	N				91-57-6	
	Naphthalene	350	0.35		U	U	54	N	N				91-20-3	
	Pentachlorophenol	350	0.35		U	U	5.3	N	N				87-86-5	
	Phenanthrene	350	0.35		U	U	40	N	N				85-01-8	
	Phenol	350	0.35		U	U	6000	N	N				108-95-2	
	Pyrene	350	0.35		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	350	0.35		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	350	0.35		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	350	0.35		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J14	Acenaphthene	330	0.33		U	U	43	N	N	1/24/2006	SW8270	55745-1	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J15	Acenaphthene	300	0.3		U	U	43	N	N	1/24/2006	SW8270	55745-2	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-I14	Acenaphthene	330	0.33		U	U	43	N	N	1/24/2006	SW8270	55745-3	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H14	Acenaphthene	290	0.29		U	U	43	N	N	1/24/2006	SW8270	55745-4	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G13	Acenaphthene	310	0.31		U	U	43	N	N	1/24/2006	SW8270	55745-5	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G14	Acenaphthene	310	0.31		U	U	43	N	N	1/24/2006	SW8270	55745-6	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H15	Acenaphthene	320	0.32		U	U	43	N	N	1/24/2006	SW8270	55745-7	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F13	Acenaphthene	320	0.32		U	U	43	N	N	1/24/2006	SW8270	55745-8	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-I15	Acenaphthene	390	0.39		U	U	43	N	N	1/24/2006	SW8270	55745-9	83-32-9	TPH, SVOCs
	Acenaphthylene	390	0.39		U	U	23	N	N				208-96-8	
	Anthracene	390	0.39		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	390	0.39		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	390	0.39		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	390	0.39		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	390	0.39		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	390	0.39		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	390	0.39		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	390	0.39		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	390	0.39		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	390	0.39		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	390	0.39		U	U	310	N	N				106-47-8	
	2-Chlorophenol	390	0.39		U	U	50	N	N				95-57-8	
	Chrysene	390	0.39		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	390	0.39		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	390	0.39		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	390	0.39		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	390	0.39		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	390	0.39		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	390	0.39		U	U	30	N	N				120-83-2	
	Diethyl phthalate	390	0.39		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	390	0.39		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	390	0.39		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	390	0.39		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	390	0.39		U	U	0.9	N	N				121-14-2	
	Fluoranthene	390	0.39		U	U	20	N	N				206-44-0	
	Fluorene	390	0.39		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	390	0.39		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	390	0.39		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	390	0.39		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	390	0.39		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	390	0.39		U	U	123	N	N				91-57-6	
	Naphthalene	390	0.39		U	U	54	N	N				91-20-3	
	Pentachlorophenol	390	0.39		U	U	5.3	N	N				87-86-5	
	Phenanthrene	390	0.39		U	U	40	N	N				85-01-8	
	Phenol	390	0.39		U	U	6000	N	N				108-95-2	
	Pyrene	390	0.39		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	390	0.39		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	390	0.39		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	390	0.39		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E13	Acenaphthene	350	0.35		U	U	43	N	N	1/24/2006	SW8270	55745-10	83-32-9	TPH, SVOCs
	Acenaphthylene	350	0.35		U	U	23	N	N				208-96-8	
	Anthracene	350	0.35		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	350	0.35		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	350	0.35		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	350	0.35		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	350	0.35		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	350	0.35		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	350	0.35		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	350	0.35		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	350	0.35		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	350	0.35		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	350	0.35		U	U	310	N	N				106-47-8	
	2-Chlorophenol	350	0.35		U	U	50	N	N				95-57-8	
	Chrysene	350	0.35		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	350	0.35		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	350	0.35		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	350	0.35		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	350	0.35		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	350	0.35		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	350	0.35		U	U	30	N	N				120-83-2	
	Diethyl phthalate	350	0.35		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	350	0.35		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	350	0.35		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	350	0.35		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	350	0.35		U	U	0.9	N	N				121-14-2	
	Fluoranthene	350	0.35		U	U	20	N	N				206-44-0	
	Fluorene	350	0.35		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	350	0.35		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	350	0.35		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	350	0.35		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	350	0.35		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	350	0.35		U	U	123	N	N				91-57-6	
	Naphthalene	350	0.35		U	U	54	N	N				91-20-3	
	Pentachlorophenol	350	0.35		U	U	5.3	N	N				87-86-5	
	Phenanthrene	350	0.35		U	U	40	N	N				85-01-8	
	Phenol	350	0.35		U	U	6000	N	N				108-95-2	
	Pyrene	350	0.35		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	350	0.35		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	350	0.35		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	350	0.35		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G15	Acenaphthene	310	0.31		U	U	43	N	N	1/24/2006	SW8270	55745-11	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F15	Acenaphthene	300	0.3		U	U	43	N	N	1/30/2006	SW8270	55797-1	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G15	Acenaphthene	310	0.31		U	U	43	N	N	1/30/2006	SW8270	55797-2	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G15D	Acenaphthene	310	0.31		U	U	43	N	N	1/31/2006	SW8270	55797-3	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-H16	Acenaphthene	370	0.37		U	U	43	N	N	1/31/2006	SW8270	55797-4	83-32-9	TPH, SVOCs
	Acenaphthylene	370	0.37		U	U	23	N	N				208-96-8	
	Anthracene	370	0.37		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	370	0.37		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	370	0.37		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	370	0.37		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	370	0.37		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	370	0.37		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	370	0.37		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	370	0.37		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	370	0.37		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	370	0.37		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	370	0.37		U	U	310	N	N				106-47-8	
	2-Chlorophenol	370	0.37		U	U	50	N	N				95-57-8	
	Chrysene	370	0.37		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	370	0.37		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	370	0.37		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	370	0.37		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	370	0.37		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	370	0.37		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	370	0.37		U	U	30	N	N				120-83-2	
	Diethyl phthalate	370	0.37		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	370	0.37		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	370	0.37		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	370	0.37		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	370	0.37		U	U	0.9	N	N				121-14-2	
	Fluoranthene	370	0.37		U	U	20	N	N				206-44-0	
	Fluorene	370	0.37		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	370	0.37		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	370	0.37		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	370	0.37		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	370	0.37		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	370	0.37		U	U	123	N	N				91-57-6	
	Naphthalene	370	0.37		U	U	54	N	N				91-20-3	
	Pentachlorophenol	370	0.37		U	U	5.3	N	N				87-86-5	
	Phenanthrene	370	0.37		U	U	40	N	N				85-01-8	
	Phenol	370	0.37		U	U	6000	N	N				108-95-2	
	Pyrene	370	0.37		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	370	0.37		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	370	0.37		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	370	0.37		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-I16	Acenaphthene	430	0.43		U	U	43	N	N	1/31/2006	SW8270	55797-5	83-32-9	TPH, SVOCs
	Acenaphthylene	430	0.43		U	U	23	N	N				208-96-8	
	Anthracene	430	0.43		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	430	0.43		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	430	0.43		U	U	0.4	N	Y				50-32-8	
	Benzo(b)fluoranthene	430	0.43		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	430	0.43		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	430	0.43		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	430	0.43		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	430	0.43		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	430	0.43		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	430	0.43		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	430	0.43		U	U	310	N	N				106-47-8	
	2-Chlorophenol	430	0.43		U	U	50	N	N				95-57-8	
	Chrysene	430	0.43		U	U	0.4	N	Y				218-01-9	
	Dibenzo(a,h)anthracene	430	0.43		U	U	0.4	N	Y				53-70-3	
	1,2-Dichlorobenzene	430	0.43		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	430	0.43		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	430	0.43		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	430	0.43		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	430	0.43		U	U	30	N	N				120-83-2	
	Diethyl phthalate	430	0.43		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	430	0.43		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	430	0.43		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	430	0.43		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	430	0.43		U	U	0.9	N	N				121-14-2	
	Fluoranthene	430	0.43		U	U	20	N	N				206-44-0	
	Fluorene	430	0.43		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	430	0.43		U	U	0.4	N	Y				118-74-1	
	Hexachlorobutadiene	430	0.43		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	430	0.43		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	430	0.43		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	430	0.43		U	U	123	N	N				91-57-6	
	Naphthalene	430	0.43		U	U	54	N	N				91-20-3	
	Pentachlorophenol	430	0.43		U	U	5.3	N	N				87-86-5	
	Phenanthrene	430	0.43		U	U	40	N	N				85-01-8	
	Phenol	430	0.43		U	U	6000	N	N				108-95-2	
	Pyrene	430	0.43		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	430	0.43		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	430	0.43		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	430	0.43		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J16	Acenaphthene	450	0.45		U	U	43	N	N	1/31/2006	SW8270	55797-6	83-32-9	TPH, SVOCs
	Acenaphthylene	450	0.45		U	U	23	N	N				208-96-8	
	Anthracene	450	0.45		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	450	0.45		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	450	0.45		U	U	0.4	N	Y				50-32-8	
	Benzo(b)fluoranthene	450	0.45		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	450	0.45		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	450	0.45		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	450	0.45		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	450	0.45		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	450	0.45		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	450	0.45		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	450	0.45		U	U	310	N	N				106-47-8	
	2-Chlorophenol	450	0.45		U	U	50	N	N				95-57-8	
	Chrysene	450	0.45		U	U	0.4	N	Y				218-01-9	
	Dibenzo(a,h)anthracene	450	0.45		U	U	0.4	N	Y				53-70-3	
	1,2-Dichlorobenzene	450	0.45		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	450	0.45		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	450	0.45		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	450	0.45		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	450	0.45		U	U	30	N	N				120-83-2	
	Diethyl phthalate	450	0.45		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	450	0.45		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	450	0.45		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	450	0.45		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	450	0.45		U	U	0.9	N	N				121-14-2	
	Fluoranthene	450	0.45		U	U	20	N	N				206-44-0	
	Fluorene	450	0.45		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	450	0.45		U	U	0.4	N	Y				118-74-1	
	Hexachlorobutadiene	450	0.45		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	450	0.45		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	450	0.45		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	450	0.45		U	U	123	N	N				91-57-6	
	Naphthalene	450	0.45		U	U	54	N	N				91-20-3	
	Pentachlorophenol	450	0.45		U	U	5.3	N	N				87-86-5	
	Phenanthrene	450	0.45		U	U	40	N	N				85-01-8	
	Phenol	450	0.45		U	U	6000	N	N				108-95-2	
	Pyrene	450	0.45		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	450	0.45		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	450	0.45		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	450	0.45		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-L17	Acenaphthene	410	0.41		U	U	43	N	N	1/31/2006	SW8270	55797-7	83-32-9	TPH, SVOCs
	Acenaphthylene	410	0.41		U	U	23	N	N				208-96-8	
	Anthracene	410	0.41		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	410	0.41		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	410	0.41		U	U	0.4	N	Y				50-32-8	
	Benzo(b)fluoranthene	410	0.41		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	410	0.41		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	410	0.41		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	410	0.41		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	410	0.41		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	410	0.41		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	410	0.41		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	410	0.41		U	U	310	N	N				106-47-8	
	2-Chlorophenol	410	0.41		U	U	50	N	N				95-57-8	
	Chrysene	410	0.41		U	U	0.4	N	Y				218-01-9	
	Dibenzo(a,h)anthracene	410	0.41		U	U	0.4	N	Y				53-70-3	
	1,2-Dichlorobenzene	410	0.41		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	410	0.41		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	410	0.41		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	410	0.41		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	410	0.41		U	U	30	N	N				120-83-2	
	Diethyl phthalate	410	0.41		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	410	0.41		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	410	0.41		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	410	0.41		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	410	0.41		U	U	0.9	N	N				121-14-2	
	Fluoranthene	410	0.41		U	U	20	N	N				206-44-0	
	Fluorene	410	0.41		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	410	0.41		U	U	0.4	N	Y				118-74-1	
	Hexachlorobutadiene	410	0.41		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	410	0.41		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	410	0.41		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	410	0.41		U	U	123	N	N				91-57-6	
	Naphthalene	410	0.41		U	U	54	N	N				91-20-3	
	Pentachlorophenol	410	0.41		U	U	5.3	N	N				87-86-5	
	Phenanthrene	410	0.41		U	U	40	N	N				85-01-8	
	Phenol	410	0.41		U	U	6000	N	N				108-95-2	
	Pyrene	410	0.41		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	410	0.41		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	410	0.41		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	410	0.41		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K16	Acenaphthene	410	0.41		U	U	43	N	N	1/31/2006	SW8270	55797-8	83-32-9	TPH, SVOCs
	Acenaphthylene	410	0.41		U	U	23	N	N				208-96-8	
	Anthracene	410	0.41		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	410	0.41		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	410	0.41		U	U	0.4	N	Y				50-32-8	
	Benzo(b)fluoranthene	410	0.41		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	410	0.41		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	410	0.41		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	410	0.41		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	410	0.41		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	410	0.41		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	410	0.41		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	410	0.41		U	U	310	N	N				106-47-8	
	2-Chlorophenol	410	0.41		U	U	50	N	N				95-57-8	
	Chrysene	410	0.41		U	U	0.4	N	Y				218-01-9	
	Dibenzo(a,h)anthracene	410	0.41		U	U	0.4	N	Y				53-70-3	
	1,2-Dichlorobenzene	410	0.41		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	410	0.41		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	410	0.41		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	410	0.41		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	410	0.41		U	U	30	N	N				120-83-2	
	Diethyl phthalate	410	0.41		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	410	0.41		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	410	0.41		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	410	0.41		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	410	0.41		U	U	0.9	N	N				121-14-2	
	Fluoranthene	410	0.41		U	U	20	N	N				206-44-0	
	Fluorene	410	0.41		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	410	0.41		U	U	0.4	N	Y				118-74-1	
	Hexachlorobutadiene	410	0.41		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	410	0.41		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	410	0.41		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	410	0.41		U	U	123	N	N				91-57-6	
	Naphthalene	410	0.41		U	U	54	N	N				91-20-3	
	Pentachlorophenol	410	0.41		U	U	5.3	N	N				87-86-5	
	Phenanthrene	410	0.41		U	U	40	N	N				85-01-8	
	Phenol	410	0.41		U	U	6000	N	N				108-95-2	
	Pyrene	410	0.41		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	410	0.41		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	410	0.41		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	410	0.41		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F12	Acenaphthene	330	0.33		U	U	43	N	N	1/31/2006	SW8270	55797-9	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E12	Acenaphthene	300	0.3		U	U	43	N	N	1/31/2006	SW8270	55797-10	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D12	Acenaphthene	350	0.35		U	U	43	N	N	1/31/2006	SW8270	55797-11	83-32-9	TPH, SVOCs
	Acenaphthylene	350	0.35		U	U	23	N	N				208-96-8	
	Anthracene	350	0.35		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	350	0.35		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	350	0.35		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	350	0.35		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	350	0.35		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	350	0.35		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	350	0.35		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	350	0.35		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	350	0.35		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	350	0.35		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	350	0.35		U	U	310	N	N				106-47-8	
	2-Chlorophenol	350	0.35		U	U	50	N	N				95-57-8	
	Chrysene	350	0.35		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	350	0.35		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	350	0.35		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	350	0.35		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	350	0.35		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	350	0.35		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	350	0.35		U	U	30	N	N				120-83-2	
	Diethyl phthalate	350	0.35		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	350	0.35		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	350	0.35		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	350	0.35		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	350	0.35		U	U	0.9	N	N				121-14-2	
	Fluoranthene	350	0.35		U	U	20	N	N				206-44-0	
	Fluorene	350	0.35		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	350	0.35		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	350	0.35		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	350	0.35		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	350	0.35		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	350	0.35		U	U	123	N	N				91-57-6	
	Naphthalene	350	0.35		U	U	54	N	N				91-20-3	
	Pentachlorophenol	350	0.35		U	U	5.3	N	N				87-86-5	
	Phenanthrene	350	0.35		U	U	40	N	N				85-01-8	
	Phenol	350	0.35		U	U	6000	N	N				108-95-2	
	Pyrene	350	0.35		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	350	0.35		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	350	0.35		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	350	0.35		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C11	Acenaphthene	330	0.33		U	U	43	N	N	1/31/2006	SW8270	55797-12	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D11	Acenaphthene	310	0.31		U	U	43	N	N	1/24/2006	SW8270	55797-13	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		375	0.375	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31	J	157	0.157	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31	J	283	0.283	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31	J	267	0.267	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		497	0.497	0.4	Y	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		807	0.807	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31	J	237	0.237	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		782	0.782	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K13	Acenaphthene	330	0.33		U	U	43	N	N	10/12/2005	SW8270	55033-1	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-M-14-S	Acenaphthene	330	0.33		U	U	43	N	N	10/12/2005	SW8270	55033-2	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K8	Acenaphthene	290	0.29		U	U	43	N	N	10/7/2005	SW8270	55033-3	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J13-S	Acenaphthene	310	0.31		U	U	43	N	N	10/7/2005	SW8270	55033-4	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K15-S	Acenaphthene	320	0.32		U	U	43	N	N	10/7/2005	SW8270	55033-5	83-32-9	TPH, SVOCs
	Acenaphthylene	320	0.32		U	U	23	N	N				208-96-8	
	Anthracene	320	0.32		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	320	0.32		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	320	0.32		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	320	0.32		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	320	0.32		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	320	0.32		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	320	0.32		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	320	0.32		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	320	0.32		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	320	0.32		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	320	0.32		U	U	310	N	N				106-47-8	
	2-Chlorophenol	320	0.32		U	U	50	N	N				95-57-8	
	Chrysene	320	0.32		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	320	0.32		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	320	0.32		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	320	0.32		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	320	0.32		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	320	0.32		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	320	0.32		U	U	30	N	N				120-83-2	
	Diethyl phthalate	320	0.32		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	320	0.32		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	320	0.32		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	320	0.32		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	320	0.32		U	U	0.9	N	N				121-14-2	
	Fluoranthene	320	0.32		U	U	20	N	N				206-44-0	
	Fluorene	320	0.32		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	320	0.32		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	320	0.32		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	320	0.32		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	320	0.32		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	320	0.32		U	U	123	N	N				91-57-6	
	Naphthalene	320	0.32		U	U	54	N	N				91-20-3	
	Pentachlorophenol	320	0.32		U	U	5.3	N	N				87-86-5	
	Phenanthrene	320	0.32		U	U	40	N	N				85-01-8	
	Phenol	320	0.32		U	U	6000	N	N				108-95-2	
	Pyrene	320	0.32		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	320	0.32		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	320	0.32		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	320	0.32		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K14	Acenaphthene	300	0.3		U	U	43	N	N	10/7/2005	SW8270	55033-6	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J9	Acenaphthene	300	0.3		U	U	43	N	N	10/12/2005	SW8270	55033-7	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K9	Acenaphthene	300	0.3		U	U	43	N	N	10/12/2005	SW8270	55033-8	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-19	Acenaphthene	300	0.3		U	U	43	N	N	10/12/2005	SW8270	55033-9	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K9-S	Acenaphthene	300	0.3		U	U	43	N	N	10/12/2005	SW8270	55033-10	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J10	Acenaphthene	290	0.29		U	U	43	N	N	10/12/2005	SW8270	55033-11	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K10	Acenaphthene	290	0.29		U	U	43	N	N	10/7/2005	SW8270	55033-12	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J11	Acenaphthene	300	0.3		U	U	43	N	N	10/7/2005	SW8270	55033-13	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K11	Acenaphthene	300	0.3		U	U	43	N	N	10/7/2005	SW8270	55033-14	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J12	Acenaphthene	340	0.34		U	U	43	N	N	10/7/2005	SW8270	55033-15	83-32-9	TPH, SVOCs
	Acenaphthylene	340	0.34		U	U	23	N	N				208-96-8	
	Anthracene	340	0.34		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	340	0.34		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	340	0.34		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	340	0.34		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	340	0.34		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	340	0.34		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	340	0.34		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	340	0.34		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	340	0.34		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	340	0.34		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	340	0.34		U	U	310	N	N				106-47-8	
	2-Chlorophenol	340	0.34		U	U	50	N	N				95-57-8	
	Chrysene	340	0.34		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	340	0.34		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	340	0.34		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	340	0.34		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	340	0.34		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	340	0.34		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	340	0.34		U	U	30	N	N				120-83-2	
	Diethyl phthalate	340	0.34		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	340	0.34		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	340	0.34		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	340	0.34		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	340	0.34		U	U	0.9	N	N				121-14-2	
	Fluoranthene	340	0.34		U	U	20	N	N				206-44-0	
	Fluorene	340	0.34		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	340	0.34		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	340	0.34		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	340	0.34		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	340	0.34		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	340	0.34		U	U	123	N	N				91-57-6	
	Naphthalene	340	0.34		U	U	54	N	N				91-20-3	
	Pentachlorophenol	340	0.34		U	U	5.3	N	N				87-86-5	
	Phenanthrene	340	0.34		U	U	40	N	N				85-01-8	
	Phenol	340	0.34		U	U	6000	N	N				108-95-2	
	Pyrene	340	0.34		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	340	0.34		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	340	0.34		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	340	0.34		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-K12	Acenaphthene	370	0.37		U	U	43	N	N	10/7/2005	SW8270	55033-16	83-32-9	TPH, SVOCs
	Acenaphthylene	370	0.37		U	U	23	N	N				208-96-8	
	Anthracene	370	0.37		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	370	0.37		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	370	0.37		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	370	0.37		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	370	0.37		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	370	0.37		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	370	0.37		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	370	0.37		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	370	0.37		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	370	0.37		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	370	0.37		U	U	310	N	N				106-47-8	
	2-Chlorophenol	370	0.37		U	U	50	N	N				95-57-8	
	Chrysene	370	0.37		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	370	0.37		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	370	0.37		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	370	0.37		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	370	0.37		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	370	0.37		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	370	0.37		U	U	30	N	N				120-83-2	
	Diethyl phthalate	370	0.37		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	370	0.37		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	370	0.37		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	370	0.37		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	370	0.37		U	U	0.9	N	N				121-14-2	
	Fluoranthene	370	0.37		U	U	20	N	N				206-44-0	
	Fluorene	370	0.37		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	370	0.37		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	370	0.37		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	370	0.37		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	370	0.37		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	370	0.37		U	U	123	N	N				91-57-6	
	Naphthalene	370	0.37		U	U	54	N	N				91-20-3	
	Pentachlorophenol	370	0.37		U	U	5.3	N	N				87-86-5	
	Phenanthrene	370	0.37		U	U	40	N	N				85-01-8	
	Phenol	370	0.37		U	U	6000	N	N				108-95-2	
	Pyrene	370	0.37		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	370	0.37		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	370	0.37		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	370	0.37		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-J13	Acenaphthene	340	0.34		U	U	43	N	N	10/12/2005	SW8270	55033-17	83-32-9	TPH, SVOCs
	Acenaphthylene	340	0.34		U	U	23	N	N				208-96-8	
	Anthracene	340	0.34		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	340	0.34		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	340	0.34		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	340	0.34		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	340	0.34		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	340	0.34		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	340	0.34		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	340	0.34		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	340	0.34		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	340	0.34		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	340	0.34		U	U	310	N	N				106-47-8	
	2-Chlorophenol	340	0.34		U	U	50	N	N				95-57-8	
	Chrysene	340	0.34		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	340	0.34		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	340	0.34		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	340	0.34		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	340	0.34		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	340	0.34		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	340	0.34		U	U	30	N	N				120-83-2	
	Diethyl phthalate	340	0.34		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	340	0.34		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	340	0.34		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	340	0.34		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	340	0.34		U	U	0.9	N	N				121-14-2	
	Fluoranthene	340	0.34		U	U	20	N	N				206-44-0	
	Fluorene	340	0.34		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	340	0.34		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	340	0.34		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	340	0.34		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	340	0.34		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	340	0.34		U	U	123	N	N				91-57-6	
	Naphthalene	340	0.34		U	U	54	N	N				91-20-3	
	Pentachlorophenol	340	0.34		U	U	5.3	N	N				87-86-5	
	Phenanthrene	340	0.34		U	U	40	N	N				85-01-8	
	Phenol	340	0.34		U	U	6000	N	N				108-95-2	
	Pyrene	340	0.34		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	340	0.34		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	340	0.34		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	340	0.34		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G12	Acenaphthene	310	0.31		U	U	43	N	N	2/16/2006	SW8270	55866-1	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G11	Acenaphthene	290	0.29		U	U	43	N	N	2/16/2006	SW8270	55866-2	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G10	Acenaphthene	310	0.31		U	U	43	N	N	2/16/2006	SW8270	55866-3	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G9	Acenaphthene	290	0.29		U	U	43	N	N	2/16/2006	SW8270	55866-4	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F9	Acenaphthene	300	0.3		U	U	43	N	N	2/16/2006	SW8270	55866-5	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F8	Acenaphthene	300	0.3		U	U	43	N	N	2/16/2006	SW8270	55866-6	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F10	Acenaphthene	300	0.3		U	U	43	N	N	2/16/2006	SW8270	55866-7	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D10	Acenaphthene	280	0.28		U	U	43	N	N	2/28/2006	SW8270	55924-4	83-32-9	TPH, SVOCs
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D9	Acenaphthene	270	0.27		U	U	43	N	N	2/28/2006	SW8270	55924-5	83-32-9	TPH, SVOCs
	Acenaphthylene	270	0.27		U	U	23	N	N				208-96-8	
	Anthracene	270	0.27		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	270	0.27		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	270	0.27		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	270	0.27		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	270	0.27		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	270	0.27		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	270	0.27		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	270	0.27		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	270	0.27		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	270	0.27		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	270	0.27		U	U	310	N	N				106-47-8	
	2-Chlorophenol	270	0.27		U	U	50	N	N				95-57-8	
	Chrysene	270	0.27		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	270	0.27		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	270	0.27		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	270	0.27		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	270	0.27		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	270	0.27		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	270	0.27		U	U	30	N	N				120-83-2	
	Diethyl phthalate	270	0.27		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	270	0.27		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	270	0.27		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	270	0.27		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	270	0.27		U	U	0.9	N	N				121-14-2	
	Fluoranthene	270	0.27		U	U	20	N	N				206-44-0	
	Fluorene	270	0.27		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	270	0.27		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	270	0.27		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	270	0.27		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	270	0.27		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	270	0.27		U	U	123	N	N				91-57-6	
	Naphthalene	270	0.27		U	U	54	N	N				91-20-3	
	Pentachlorophenol	270	0.27		U	U	5.3	N	N				87-86-5	
	Phenanthrene	270	0.27		U	U	40	N	N				85-01-8	
	Phenol	270	0.27		U	U	6000	N	N				108-95-2	
	Pyrene	270	0.27		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	270	0.27		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	270	0.27		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	270	0.27		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D8	Acenaphthene	330	0.33		U	U	43	N	N	2/28/2006	SW8270	55924-6	83-32-9	TPH, SVOCs
	Acenaphthylene	330	0.33		U	U	23	N	N				208-96-8	
	Anthracene	330	0.33		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	330	0.33		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	330	0.33		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	330	0.33		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	330	0.33		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	330	0.33		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	330	0.33		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	330	0.33		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	330	0.33		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	330	0.33		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	330	0.33		U	U	310	N	N				106-47-8	
	2-Chlorophenol	330	0.33		U	U	50	N	N				95-57-8	
	Chrysene	330	0.33		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	330	0.33		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	330	0.33		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	330	0.33		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	330	0.33		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	330	0.33		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	330	0.33		U	U	30	N	N				120-83-2	
	Diethyl phthalate	330	0.33		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	330	0.33		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	330	0.33		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	330	0.33		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	330	0.33		U	U	0.9	N	N				121-14-2	
	Fluoranthene	330	0.33		U	U	20	N	N				206-44-0	
	Fluorene	330	0.33		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	330	0.33		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	330	0.33		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	330	0.33		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	330	0.33		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	330	0.33		U	U	123	N	N				91-57-6	
	Naphthalene	330	0.33		U	U	54	N	N				91-20-3	
	Pentachlorophenol	330	0.33		U	U	5.3	N	N				87-86-5	
	Phenanthrene	330	0.33		U	U	40	N	N				85-01-8	
	Phenol	330	0.33		U	U	6000	N	N				108-95-2	
	Pyrene	330	0.33		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	330	0.33		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	330	0.33		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	330	0.33		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E9	Acenaphthene	310	0.31		U	U	43	N	N	3/1/2006	SW8270	55927-1	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E10	Acenaphthene	310	0.31		U	U	43	N	N	3/2/2006	SW8270	55927-2	83-32-9	TPH, SVOCs
	Acenaphthylene	310	0.31		U	U	23	N	N				208-96-8	
	Anthracene	310	0.31		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	310	0.31		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	310	0.31		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	310	0.31		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	310	0.31		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	310	0.31		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	310	0.31		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	310	0.31		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	310	0.31		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	310	0.31		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	310	0.31		U	U	310	N	N				106-47-8	
	2-Chlorophenol	310	0.31		U	U	50	N	N				95-57-8	
	Chrysene	310	0.31		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	310	0.31		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	310	0.31		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	310	0.31		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	310	0.31		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	310	0.31		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	310	0.31		U	U	30	N	N				120-83-2	
	Diethyl phthalate	310	0.31		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	310	0.31		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	310	0.31		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	310	0.31		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	310	0.31		U	U	0.9	N	N				121-14-2	
	Fluoranthene	310	0.31		U	U	20	N	N				206-44-0	
	Fluorene	310	0.31		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	310	0.31		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	310	0.31		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	310	0.31		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	310	0.31		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	310	0.31		U	U	123	N	N				91-57-6	
	Naphthalene	310	0.31		U	U	54	N	N				91-20-3	
	Pentachlorophenol	310	0.31		U	U	5.3	N	N				87-86-5	
	Phenanthrene	310	0.31		U	U	40	N	N				85-01-8	
	Phenol	310	0.31		U	U	6000	N	N				108-95-2	
	Pyrene	310	0.31		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	310	0.31		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	310	0.31		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	310	0.31		U	U	58	N	N				88-06-2	

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Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-F11	Acenaphthene	290	0.29		U	U	43	N	N	3/2/2006	SW8270	55927-3	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E8	Acenaphthene	300	0.3		U	U	43	N	N	3/2/2006	SW8270	55927-4	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-41
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	QUAL	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-E11	Acenaphthene	280	0.28		U	U	43	N	N	3/2/2006	SW8270	55927-5	83-32-9	TPH, SVOCs
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-42
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory Dioxins/Furans Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-C-STRAIGHTDIS-D3-A	Solid	1,2,3,4,6,7,8-HpCDD		94					10/7/2005	SW846 8290	54955-1	35822-46-9
	Solid	1,2,3,4,6,7,8-HpCDF	ND	1.1					10/7/2005	SW846 8290	54955-1	67562-39-4
	Solid	1,2,3,4,7,8,9-HpCDF	ND	0.43					10/7/2005	SW846 8290	54955-1	55673-89-7
	Solid	1,2,3,4,7,8-HxCDD	ND	0.79					10/7/2005	SW846 8290	54955-1	39227-28-6
	Solid	1,2,3,4,7,8-HxCDF	ND	0.37					10/7/2005	SW846 8290	54955-1	70648-26-9
	Solid	1,2,3,6,7,8-HxCDD	ND	0.78					10/7/2005	SW846 8290	54955-1	57653-85-7
	Solid	1,2,3,6,7,8-HxCDF	ND	0.34					10/7/2005	SW846 8290	54955-1	57117-44-9
	Solid	1,2,3,7,8,9-HxCDD	ND	1.6					10/7/2005	SW846 8290	54955-1	19408-74-3
	Solid	1,2,3,7,8,9-HxCDF	ND	0.43					10/7/2005	SW846 8290	54955-1	72918-21-9
	Solid	1,2,3,7,8-PeCDD	ND	0.65					10/7/2005	SW846 8290	54955-1	40321-76-4
	Solid	1,2,3,7,8-PeCDF	ND	0.38					10/7/2005	SW846 8290	54955-1	57117-41-6
	Solid	2,3,4,6,7,8-HxCDF	ND	0.37					10/7/2005	SW846 8290	54955-1	60851-34-5
	Solid	2,3,4,7,8-PeCDF	ND	0.37					10/7/2005	SW846 8290	54955-1	57117-31-4
	Solid	2,3,7,8-TCDD	ND	0.38					10/7/2005	SW846 8290	54955-1	1746-01-6
	Solid	2,3,7,8-TCDF	ND	0.29					10/7/2005	SW846 8290	54955-1	51207-31-9
	Solid	OCDD	E	13000					10/7/2005	SW846 8290	54955-1	3268-87-9
	Solid	OCDF	ND	0.68					10/7/2005	SW846 8290	54955-1	39001-02-0
	Solid	Total HpCDDs		210					10/7/2005	SW846 8290	54955-1	37871-00-4
	Solid	Total HpCDFs	ND	1.1					10/7/2005	SW846 8290	54955-1	38998-75-3
	Solid	Total HxCDDs		8.7					10/7/2005	SW846 8290	54955-1	34465-46-8
	Solid	Total HxCDFs	ND	0.43					10/7/2005	SW846 8290	54955-1	55684-94-1
	Solid	Total PeCDDs	ND	0.65					10/7/2005	SW846 8290	54955-1	36088-22-9
	Solid	Total PeCDFs	ND	0.88					10/7/2005	SW846 8290	54955-1	30402-15-4
	Solid	Total TCDDs	ND	0.38					10/7/2005	SW846 8290	54955-1	41903-57-5
	Solid	Total TCDFs	ND	0.29					10/7/2005	SW846 8290	54955-1	55722-27-5
	2,3,7,8-TCDD Toxicity Equivalents*			3.1	3.9	N						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-42
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Confirmatory Dioxins/Furans Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	Result (ng/Kg)	Region 9 PRG Residential (ng/kg)	Exceed Residential PRGs? (Y/N)	RIDEM Residential Criteria (ng/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-C-STRAIGHTDIS-C5	Solid	1,2,3,4,6,7,8-HpCDD		130					10/7/2005	SW846 8290	54955-2	35822-46-9
	Solid	1,2,3,4,6,7,8-HpCDF	ND	1.4					10/7/2005	SW846 8290	54955-2	67562-39-4
	Solid	1,2,3,4,7,8,9-HpCDF	ND	0.60					10/7/2005	SW846 8290	54955-2	55673-89-7
	Solid	1,2,3,4,7,8-HxCDD	ND	1.9					10/7/2005	SW846 8290	54955-2	39227-28-6
	Solid	1,2,3,4,7,8-HxCDF	ND	0.43					10/7/2005	SW846 8290	54955-2	70648-26-9
	Solid	1,2,3,6,7,8-HxCDD	ND	2.1					10/7/2005	SW846 8290	54955-2	57653-85-7
	Solid	1,2,3,6,7,8-HxCDF	ND	0.39					10/7/2005	SW846 8290	54955-2	57117-44-9
	Solid	1,2,3,7,8,9-HxCDD	ND	3.4					10/7/2005	SW846 8290	54955-2	19408-74-3
	Solid	1,2,3,7,8,9-HxCDF	ND	0.50					10/7/2005	SW846 8290	54955-2	72918-21-9
	Solid	1,2,3,7,8-PeCDD	ND	0.88					10/7/2005	SW846 8290	54955-2	40321-76-4
	Solid	1,2,3,7,8-PeCDF	ND	0.45					10/7/2005	SW846 8290	54955-2	57117-41-6
	Solid	2,3,4,6,7,8-HxCDF	ND	0.43					10/7/2005	SW846 8290	54955-2	60851-34-5
	Solid	2,3,4,7,8-PeCDF	ND	0.43					10/7/2005	SW846 8290	54955-2	57117-31-4
	Solid	2,3,7,8-TCDD	ND	0.39					10/7/2005	SW846 8290	54955-2	1746-01-6
	Solid	2,3,7,8-TCDF	ND	0.55					10/7/2005	SW846 8290	54955-2	51207-31-9
	Solid	OCDD	E	10000					10/7/2005	SW846 8290	54955-2	3268-87-9
	Solid	OCDF	ND	2.5					10/7/2005	SW846 8290	54955-2	39001-02-0
	Solid	Total HpCDDs		330					10/7/2005	SW846 8290	54955-2	37871-00-4
	Solid	Total HpCDFs	ND	1.4					10/7/2005	SW846 8290	54955-2	38998-75-3
	Solid	Total HxCDDs		24					10/7/2005	SW846 8290	54955-2	34465-46-8
	Solid	Total HxCDFs	ND	0.50					10/7/2005	SW846 8290	54955-2	55684-94-1
	Solid	Total PeCDDs	ND	0.88					10/7/2005	SW846 8290	54955-2	36088-22-9
	Solid	Total PeCDFs	ND	0.45					10/7/2005	SW846 8290	54955-2	30402-15-4
	Solid	Total TCDDs	ND	0.39					10/7/2005	SW846 8290	54955-2	41903-57-5
	Solid	Total TCDFs	ND	0.55					10/7/2005	SW846 8290	54955-2	55722-27-5
	2,3,7,8-TCDD Toxicity Equivalents*			3.5	3.9	N						

Note:

* 2,3,7,8-TCDD Toxicity Equivalents was calculated based on "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Update" (EPA/625/3-89/016, March 1989). 2,3,7,8-TCDD Equivalents for the sample was compared with EPA Region 9 PRG-Residential Criteria because corresponding RIDEM Residential Criteria were not available.

TABLE 7-43
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Re-excavation Confirmatory TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUATITATION LIMIT (mg/Kg)	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Lab ID#	ANALYTES RUN
TF4-C-STRAIGHTDIS-C7-1	Soil	TPH	22	U	500	N	N	11/4/2005	55258-1	TPH, SVOCS
TF4-C-STRAIGHTDIS-C7-1D	Soil	TPH	22	U	500	N	N	11/4/2005	55258-2	TPH, SVOCS
TF4-C-STRAIGHTDIS-C6-1	Soil	TPH	22	U	500	N	N	11/4/2005	55258-3	TPH, SVOCS
TF4-C-STRAIGHTDIS-B5-1	Soil	TPH	22	U	500	N	N	11/4/2005	55258-4	TPH, SVOCS
TF4-C-STRAIGHTDIS-C3-1	Soil	TPH	22	U	500	N	N	11/4/2005	55258-5	TPH, SVOCS
TF4-C-STRAIGHTDIS-D3-1	Soil	TPH	22	U	500	N	N	11/4/2005	55258-6	TPH, SVOCS
TF4-C-STRAIGHTDIS-I8-1	Soil	TPH	20	U	500	N	N	11/4/2005	55258-7	TPH, SVOCS
TF4-C-STRAIGHTDIS-G5-1	Soil	TPH	20	U	500	N	N	11/5/2005	55258-8	TPH, SVOCS
TF4-C-STRAIGHTDIS-F14-B1	Soil	TPH	22	U	500	N	N	2/21/2006	55885-1	TPH, SVOCS
TF4-C-STRAIGHTDIS-K17-B1	Soil	TPH	24	U	500	N	N	2/21/2006	55885-2	TPH, SVOCS
TF4-C-STRAIGHTDIS-F14-SW1	Soil	TPH	22	39	500	N	N	2/28/2006	55925-1	TPH
TF4-C-STRAIGHTDIS-F14-SW2	Soil	TPH	24	35	500	N	N	2/28/2006	55925-2	TPH
TF4-C-STRAIGHTDIS-F14-SW3	Soil	TPH	22	39	500	N	N	2/28/2006	55925-3	TPH
TF4-C-STRAIGHTDIS-F14-SW4	Soil	TPH	22	U	500	N	N	2/28/2006	55925-4	TPH
TF4-C-STRAIGHTDIS-K17-SW1	Soil	TPH	26	30	500	N	N	2/28/2006	55925-6	TPH
TF4-C-STRAIGHTDIS-K17-SW2	Soil	TPH	24	29	500	N	N	2/28/2006	55925-7	TPH
TF4-C-STRAIGHTDIS-K17-SW2-RX	Soil	TPH	24	38	500	N	N	3/30/2006	55925-7 RX	TPH
TF4-C-STRAIGHTDIS-K17-SW3	Soil	TPH	26	44	500	N	N	2/28/2006	55925-5	TPH

TABLE 7-44
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Re-excavation Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	Qualifier	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C7-1	Acenaphthene	290	0.29		U	U	43	N	N	11/11/2005	SW8270	55298-3	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-44
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Re-excavation Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	Qualifier	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C7-1D	Acenaphthene	280	0.28		U	U	43	N	N	11/11/2005	SW8270	55298-4	83-32-9	TPH, SVOCs
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-44
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Re-excavation Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	Qualifier	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C6-1	Acenaphthene	280	0.28		U	U	43	N	N	11/11/2005	SW8270	55298-4	83-32-9	TPH, SVOCs
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-44
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Re-excavation Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	Qualifier	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-B5-1	Acenaphthene	290	0.29		U	U	43	N	N	11/11/2005	SW8270	55298-6	83-32-9	TPH, SVOCs
	Acenaphthylene	290	0.29		U	U	23	N	N				208-96-8	
	Anthracene	290	0.29		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	290	0.29		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	290	0.29		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	290	0.29		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	290	0.29		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	290	0.29		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	290	0.29		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	290	0.29		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	290	0.29		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	290	0.29		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	290	0.29		U	U	310	N	N				106-47-8	
	2-Chlorophenol	290	0.29		U	U	50	N	N				95-57-8	
	Chrysene	290	0.29		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	290	0.29		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	290	0.29		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	290	0.29		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	290	0.29		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	290	0.29		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	290	0.29		U	U	30	N	N				120-83-2	
	Diethyl phthalate	290	0.29		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	290	0.29		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	290	0.29		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	290	0.29		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	290	0.29		U	U	0.9	N	N				121-14-2	
	Fluoranthene	290	0.29		U	U	20	N	N				206-44-0	
	Fluorene	290	0.29		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	290	0.29		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	290	0.29		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	290	0.29		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	290	0.29		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	290	0.29		U	U	123	N	N				91-57-6	
	Naphthalene	290	0.29		U	U	54	N	N				91-20-3	
	Pentachlorophenol	290	0.29		U	U	5.3	N	N				87-86-5	
	Phenanthrene	290	0.29		U	U	40	N	N				85-01-8	
	Phenol	290	0.29		U	U	6000	N	N				108-95-2	
	Pyrene	290	0.29		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	290	0.29		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	290	0.29		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	290	0.29		U	U	58	N	N				88-06-2	

TABLE 7-44
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Re-excavation Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	Qualifier	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-C3-1	Acenaphthene	280	0.28		U	U	43	N	N	11/11/2005	SW8270	55298-7	83-32-9	TPH, SVOCs
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-44
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Re-excavation Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	Qualifier	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-D3-1	Acenaphthene	300	0.3		U	U	43	N	N	11/11/2005	SW8270	55298-8	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-44
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Re-excavation Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	Qualifier	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-18-1	Acenaphthene	280	0.28		U	U	43	N	N	11/11/2005	SW8270	55298-9	83-32-9	TPH, SVOCs
	Acenaphthylene	280	0.28		U	U	23	N	N				208-96-8	
	Anthracene	280	0.28		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	280	0.28		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	280	0.28		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	280	0.28		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	280	0.28		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	280	0.28		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	280	0.28		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	280	0.28		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	280	0.28		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	280	0.28		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	280	0.28		U	U	310	N	N				106-47-8	
	2-Chlorophenol	280	0.28		U	U	50	N	N				95-57-8	
	Chrysene	280	0.28		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	280	0.28		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	280	0.28		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	280	0.28		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	280	0.28		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	280	0.28		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	280	0.28		U	U	30	N	N				120-83-2	
	Diethyl phthalate	280	0.28		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	280	0.28		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	280	0.28		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	280	0.28		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	280	0.28		U	U	0.9	N	N				121-14-2	
	Fluoranthene	280	0.28		U	U	20	N	N				206-44-0	
	Fluorene	280	0.28		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	280	0.28		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	280	0.28		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	280	0.28		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	280	0.28		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	280	0.28		U	U	123	N	N				91-57-6	
	Naphthalene	280	0.28		U	U	54	N	N				91-20-3	
	Pentachlorophenol	280	0.28		U	U	5.3	N	N				87-86-5	
	Phenanthrene	280	0.28		U	U	40	N	N				85-01-8	
	Phenol	280	0.28		U	U	6000	N	N				108-95-2	
	Pyrene	280	0.28		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	280	0.28		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	280	0.28		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	280	0.28		U	U	58	N	N				88-06-2	

TABLE 7-44
Tank Farm 4 Ruin 1 Straight Discharge Line Outfall
Re-excavation Confirmatory SVOC Analytical Data

SAMPLE ID	PARAMETER	QUAT (ppb)	QUAT (ppm)	Qualifier	RESULT (ppb)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS	ANALYTES RUN
TF4-C-STRAIGHTDIS-G5-1	Acenaphthene	300	0.3		U	U	43	N	N	11/11/2005	SW8270	55298-10	83-32-9	TPH, SVOCs
	Acenaphthylene	300	0.3		U	U	23	N	N				208-96-8	
	Anthracene	300	0.3		U	U	35	N	N				120-12-7	
	Benzo(a)anthracene	300	0.3		U	U	0.9	N	N				56-55-3	
	Benzo(a)pyrene	300	0.3		U	U	0.4	N	N				50-32-8	
	Benzo(b)fluoranthene	300	0.3		U	U	0.9	N	N				205-99-2	
	Benzo(g,h,i)perylene	300	0.3		U	U	0.8	N	N				191-24-2	
	Benzo(k)fluoranthene	300	0.3		U	U	0.9	N	N				207-08-9	
	1,1-Biphenyl	300	0.3		U	U	0.8	N	N				92-52-4	
	bis(2-Ethylhexyl)phthalate	300	0.3		U	U	46	N	N				117-81-7	
	bis(2-Chloroethyl)ether	300	0.3		U	U	0.6	N	N				111-44-4	
	bis(2-chloroisopropyl)ether	300	0.3		U	U	9.1	N	N				108-60-1	
	4-Chloroaniline	300	0.3		U	U	310	N	N				106-47-8	
	2-Chlorophenol	300	0.3		U	U	50	N	N				95-57-8	
	Chrysene	300	0.3		U	U	0.4	N	N				218-01-9	
	Dibenzo(a,h)anthracene	300	0.3		U	U	0.4	N	N				53-70-3	
	1,2-Dichlorobenzene	300	0.3		U	U	510	N	N				95-50-1	
	1,3-Dichlorobenzene	300	0.3		U	U	430	N	N				541-73-1	
	1,4-Dichlorobenzene	300	0.3		U	U	27	N	N				106-46-7	
	3,3'-Dichlorobenzidine	300	0.3		U	U	1.4	N	N				91-94-1	
	2,4-Dichlorophenol	300	0.3		U	U	30	N	N				120-83-2	
	Diethyl phthalate	300	0.3		U	U	340	N	N				84-66-2	
	2,4-Dimethyl phenol	300	0.3		U	U	1400	N	N				105-67-9	
	Dimethyl phthalate	300	0.3		U	U	1900	N	N				131-11-3	
	2,4-Dinitrophenol	300	0.3		U	U	160	N	N				51-28-5	
	2,4-Dinitrotoluene	300	0.3		U	U	0.9	N	N				121-14-2	
	Fluoranthene	300	0.3		U	U	20	N	N				206-44-0	
	Fluorene	300	0.3		U	U	28	N	N				86-73-7	
	Hexachlorobenzene	300	0.3		U	U	0.4	N	N				118-74-1	
	Hexachlorobutadiene	300	0.3		U	U	8.2	N	N				87-68-3	
	Hexachloroethane	300	0.3		U	U	46	N	N				67-72-1	
	Indeno(1,2,3-cd)pyrene	300	0.3		U	U	0.9	N	N				193-39-5	
	2-Methyl naphthalene	300	0.3		U	U	123	N	N				91-57-6	
	Naphthalene	300	0.3		U	U	54	N	N				91-20-3	
	Pentachlorophenol	300	0.3		U	U	5.3	N	N				87-86-5	
	Phenanthrene	300	0.3		U	U	40	N	N				85-01-8	
	Phenol	300	0.3		U	U	6000	N	N				108-95-2	
	Pyrene	300	0.3		U	U	13	N	N				129-00-0	
	1,2,4-Trichlorobenzene	300	0.3		U	U	96	N	N				120-82-1	
	2,4,5-Trichlorophenol	300	0.3		U	U	330	N	N				95-95-4	
	2,4,6-Trichlorophenol	300	0.3		U	U	58	N	N				88-06-2	

TABLE 7-45
Tank Farm 4 Ruin 1 Diagonal Line Discharge
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-R1-DIAGONAL_DIS	Soil	Total Petroleum Hydrocarbons (TPH)		72	500	N	N	2/10/2005	SW8015	53525-1	

TABLE 7-46
Tank Farm 4 Ruin 2 Outfall
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-R2-OUTFALL-1	Soil	TPH		61	500	N	N	3/18/2005	EPA8015	53645-8	

TABLE 7-47
Tank Farm 4 Ruin 2 Outfall
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-R2-OUTFALL-1	Soil	Acenaphthene	U	0.32	43	N	N	3/19/2005	SW8270	53645-8	83-32-9
		Acenaphthylene	U	0.32	23	N	N				208-96-8
		Anthracene	U	0.32	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.32	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.32	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.32	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.32	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.32	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.32	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.32	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.32	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.32	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.32	310	N	N				106-47-8
		2-Chlorophenol	U	0.32	50	N	N				95-57-8
		Chrysene	U	0.32	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.32	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.32	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.32	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.32	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.32	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.32	30	N	N				120-83-2
		Diethyl phthalate	U	0.32	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.32	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.32	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.32	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.32	0.9	N	N				121-14-2
		Fluoranthene	U	0.32	20	N	N				206-44-0
		Fluorene	U	0.32	28	N	N				86-73-7
		Hexachlorobenzene	U	0.32	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.32	8.2	N	N				87-68-3
		Hexachloroethane	U	0.32	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.32	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.32	123	N	N				91-57-6
		Naphthalene	U	0.32	54	N	N				91-20-3
		Pentachlorophenol	U	0.32	5.3	N	N				87-86-5
		Phenanthrene	U	0.32	40	N	N				85-01-8
		Phenol	U	0.32	6000	N	N				108-95-2
		Pyrene	U	0.32	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.32	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.32	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.32	58	N	N				88-06-2

TABLE 7-48
Tank Farm 4 Ruin 2 Drainage Swale
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-R2-SWALE1	Soil	Total Petroleum Hydrocarbons (TPH)	U	22	500	N	N	2/10/2005	SW8015	54113-11	
TF4-R2-SWALE2	Soil	Total Petroleum Hydrocarbons (TPH)		50	500	N	N	2/11/2005	SW8015	54113-12	
TF4-R2-SWALE3	Soil	Total Petroleum Hydrocarbons (TPH)		27	500	N	N	2/12/2005	SW8015	54113-13	

TABLE 7-49
Tank Farm 4 Buoy Sheds
Lead Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-BUOYSHD1-01	Soil	Lead		15.3	150	N	N		SW6010B	612463	7439-92-1
TF4-BUOYSHD1-02	Soil	Lead		17.7	150	N	N		SW6010B	612464	7439-92-1
TF4-BUOYSHD2-01	Soil	Lead		22.8	150	N	N		SW6010B	612465	7439-92-1
TF4-BUOYSHD2-02	Soil	Lead		33.9	150	N	N		SW6010B	612466	7439-92-1

TABLE 7-50
Tank Farm 4 MW-10
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/L)	RIDEM Residential Criteria (mg/L)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-MW10	Water	Total Petroleum Hydrocarbons (TPH)	U	0.3	N/A	N	N	2/7/2005	SW8015B	53501-1	
TF4-MW10D	Water	Total Petroleum Hydrocarbons (TPH)	U	0.3	N/A	N	N	2/7/2005	SW8015B	53501-2	

**TABLE 7-51
Tank Farm 4 MW-10
Lead Analytical Data**

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/L)	RIDEM Residential Criteria (mg/L)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-MW10	Water	Lead	U	0.0001	0.015	N	N	2/7/2005	SW6010B	607319	7439-92-1
TF4-MW10D	Water	Lead	U	0.0001	0.015	N	N	2/7/2005	SW6010B	607320	7439-92-1

TABLE 7-52
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
Petroflag Summary Results

Sample ID	Soil Description (Dry / Moist / Saturated)	Date Analyzed	Dilution Factor	Petroflag Screening RF = 6 (ppm)
TF5-P-SHED-1	Dry	8/16/05	1	133
TF5-P-SHED-2	Dry	8/16/05	1	372
TF5-P-SHED-3	Dry	8/16/05	1	82
TF5-P-SHED-4	Dry	8/16/05	1	144
TF5-P-SHED-5	Dry	8/23/05	1	249
TF5-P-NONVEG-1	Dry	8/16/05	1	36
TF5-P-NONVEG-2	Dry	8/16/05	1	37
TF5-P-NONVEG-3	Dry	8/16/05	1	38
TF5-P-NONVEG-4	Dry	8/16/05	1	60

Notes:
DF=10g/5g=2

TABLE 7-53
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-1	Soil	TPH	24	154	500	N	N	8/16/2005	SW8015	54738-12	
TF5-L-SHED-2	Soil	TPH	24	329	500	N	N	8/16/2005	SW8015	54738-13	
TF5-L-SHED-4	Soil	TPH	22	112	500	N	N	8/16/2005	SW8015	54738-14	
TF5-L-SHED-5	Soil	TPH	24	161	500	N	N	8/24/2005	SW8015	54775-1	
TF5-L-NONVEG-4	Soil	TPH	22	64	500	N	N	8/26/2005	SW8015	54794-2	

TABLE 7-54
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
VOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL (ppm)	Result (mg/Kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-5B	SOIL	Acetone	0.0039	0.099	7800	N	N	8/30/2005	8260	635219	67-64-1
		Benzene	0.0039	U	2.5	N	N				71-43-2
		Bromodichloromethane	0.0039	U	10	N	N				75-27-4
		Bromoform	0.0039	U	81	N	N				75-25-2
		Bromomethane	0.0039	U	0.8	N	N				74-83-9
		Carbon tetrachloride	0.0039	U	1.5	N	N				56-23-5
		Chlorobenzene	0.0039	U	210	N	N				108-90-7
		Chloroform	0.0039	U	1.2	N	N				67-66-3
		Dibromochloromethane	0.0039	U	7.6	N	N				124-48-1
		Dibromochloropropane	0.0039	U	0.5	N	N				96-12-8
		1,1-Dichloroethane	0.0039	U	920	N	N				75-34-3
		1,1-Dichloroethene	0.0039	U	0.2	N	N				75-35-4
		1,2-Dichloroethane	0.0039	U	0.9	N	N				107-06-2
		cis-1,2-Dichloroethene	0.0039	U	630	N	N				156-59-2
		Trans-1,2- Dichloroethene	0.0039	U	1100	N	N				156-60-5
		1,2-Dichloropropane	0.0039	U	1.9	N	N				78-87-5
		Ethyl benzene	0.0039	U	71	N	N				100-41-4
		Ethylene dibromide	0.0039	U	0.01	N	N				
		Isopropyl benzene	0.0039	U	27	N	N				98-82-8
		Methyl ethyl ketone	0.0039	0.0098	10000	N	N				78-93-3
		Methyl isobutyl ketone	0.0039	U	1200	N	N				108-10-1
		Methyl-tert-butyl-ether	0.0039	U	390	N	N				1634-04-4
		Methylene chloride	0.0039	U	45	N	N				75-09-2
		Styrene	0.0039	U	13	N	N				100-42-5
		1,1,1,2,-Tetrachloroethane	0.0039	U	2.2	N	N				630-20-6
		1,1,2,2,-Tetrachloroethane	0.0039	U	1.3	N	N				79-34-5
		Tetrachloroethylene	0.0039	U	12	N	N				127-18-4
		Toluene	0.0039	U	190	N	N				108-88-3
		1,1,1-Trichloroethane	0.0039	U	540	N	N				71-55-6
		1,1,2-Trichloroethane	0.0039	U	3.6	N	N				79-00-5
		Trichloroethylene	0.0039	U	13	N	N				79-01-6
		Vinyl chloride	0.0039	U	0.02	N	N				75-01-4
		Xylenes (total)	0.0039	U	110	N	N				1330-20-7

TABLE 7-55
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-1	Soil	Acenaphthene	0.3		U	43	N	N	8/26/2005	SW8270	54767-1	83-32-9
		Acenaphthylene	0.3		U	23	N	N				208-96-8
		Anthracene	0.3		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.3	J	0.226	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.3	J	0.158	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.3		0.374	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.3		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.3	J	0.244	0.9	N	N				207-08-9
		1,1-Biphenyl	0.3		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.3		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.3		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.3		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.3		U	310	N	N				106-47-8
		2-Chlorophenol	0.3		U	50	N	N				95-57-8
		Chrysene	0.3		0.376	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.3		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.3		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.3		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.3		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.3		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.3		U	30	N	N				120-83-2
		Diethyl phthalate	0.3		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.3		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.3		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.3		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.3		U	0.9	N	N				121-14-2
		Fluoranthene	0.3		0.676	20	N	N				206-44-0
		Fluorene	0.3		U	28	N	N				86-73-7
		Hexachlorobenzene	0.3		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.3		U	8.2	N	N				87-68-3
		Hexachloroethane	0.3		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.3	J	0.164	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.3		U	123	N	N				91-57-6
		Naphthalene	0.3		U	54	N	N				91-20-3
		Pentachlorophenol	0.3		U	5.3	N	N				87-86-5
		Phenanthrene	0.3		U	40	N	N				85-01-8
		Phenol	0.3		U	6000	N	N				108-95-2
		Pyrene	0.3		0.488	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.3		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.3		U	330	N	N				95-95-4
		2,4,6- Trichlorophenol	0.3		U	58	N	N				88-06-2

TABLE 7-55
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-2	Soil	Acenaphthene	0.29		U	43	N	N	8/26/2005	SW8270	54767-2	83-32-9
		Acenaphthylene	0.29		U	23	N	N				208-96-8
		Anthracene	0.29	J	0.230	35	N	N				120-12-7
		Benzo(a)anthracene	0.29		0.697	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.29		0.508	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene	0.29		0.778	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.29		0.305	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.29		0.562	0.9	N	N				207-08-9
		1,1-Biphenyl	0.29		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.29		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.29		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.29		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.29		U	310	N	N				106-47-8
		2-Chlorophenol	0.29		U	50	N	N				95-57-8
		Chrysene	0.29		0.811	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	0.29		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.29		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.29		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.29		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.29		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.29		U	30	N	N				120-83-2
		Diethyl phthalate	0.29		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.29		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.29		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.29		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.29		U	0.9	N	N				121-14-2
		Fluoranthene	0.29		1.390	20	N	N				206-44-0
		Fluorene	0.29		U	28	N	N				86-73-7
		Hexachlorobenzene	0.29		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.29		U	8.2	N	N				87-68-3
		Hexachloroethane	0.29		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.29		0.393	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.29		U	123	N	N				91-57-6
		Naphthalene	0.29		U	54	N	N				91-20-3
		Pentachlorophenol	0.29		U	5.3	N	N				87-86-5
		Phenanthrene	0.29		0.543	40	N	N				85-01-8
		Phenol	0.29		U	6000	N	N				108-95-2
		Pyrene	0.29		1.050	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.29		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.29		U	330	N	N				95-95-4
		2,4,6- Trichlorophenol	0.29		U	58	N	N				88-06-2

TABLE 7-55
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-4	Soil	Acenaphthene	0.3		U	43	N	N	8/26/2005	SW8270	54767-3	83-32-9
		Acenaphthylene	0.3		U	23	N	N				208-96-8
		Anthracene	0.3		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.3		0.338	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.3		0.303	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.3		0.329	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.3	J	0.186	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.3	J	0.255	0.9	N	N				207-08-9
		1,1-Biphenyl	0.3		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.3		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.3		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.3		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.3		U	310	N	N				106-47-8
		2-Chlorophenol	0.3		U	50	N	N				95-57-8
		Chrysene	0.3		0.383	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.3		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.3		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.3		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.3		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.3		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.3		U	30	N	N				120-83-2
		Diethyl phthalate	0.3		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.3		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.3		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.3		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.3		U	0.9	N	N				121-14-2
		Fluoranthene	0.3		0.746	20	N	N				206-44-0
		Fluorene	0.3		U	28	N	N				86-73-7
		Hexachlorobenzene	0.3		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.3		U	8.2	N	N				87-68-3
		Hexachloroethane	0.3		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.3	J	0.234	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.3		U	123	N	N				91-57-6
		Naphthalene	0.3		U	54	N	N				91-20-3
		Pentachlorophenol	0.3		U	5.3	N	N				87-86-5
		Phenanthrene	0.3	J	0.172	40	N	N				85-01-8
		Phenol	0.3		U	6000	N	N				108-95-2
		Pyrene	0.3		0.536	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.3		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.3		U	330	N	N				95-95-4
		2,4,6- Trichlorophenol	0.3		U	58	N	N				88-06-2

TABLE 7-55
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NONVEG-4	Soil	Acenaphthene	0.29		U	43	N	N	8/30/2005	SW8270	54794-2	83-32-9
		Acenaphthylene	0.29		U	23	N	N				208-96-8
		Anthracene	0.29		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.29		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.29		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.29		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.29		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.29		U	0.9	N	N				207-08-9
		1,1-Biphenyl	0.29		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.29		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.29		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.29		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.29		U	310	N	N				106-47-8
		2-Chlorophenol	0.29		U	50	N	N				95-57-8
		Chrysene	0.29		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.29		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.29		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.29		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.29		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.29		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.29		U	30	N	N				120-83-2
		Diethyl phthalate	0.29		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.29		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.29		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.29		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.29		U	0.9	N	N				121-14-2
		Fluoranthene	0.29		U	20	N	N				206-44-0
		Fluorene	0.29		U	28	N	N				86-73-7
		Hexachlorobenzene	0.29		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.29		U	8.2	N	N				87-68-3
		Hexachloroethane	0.29		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.29		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.29		U	123	N	N				91-57-6
		Naphthalene	0.29		U	54	N	N				91-20-3
		Pentachlorophenol	0.29		U	5.3	N	N				87-86-5
		Phenanthrene	0.29		U	40	N	N				85-01-8
		Phenol	0.29		U	6000	N	N				108-95-2
		Pyrene	0.29		U	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.29		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.29		U	330	N	N				95-95-4
		2,4,6- Trichlorophenol	0.29		U	58	N	N				88-06-2

J=Estimated Value

TABLE 7-55
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-5	Soil	Acenaphthene	0.29		U	43	N	N	8/30/2005	SW8270	54794-6	83-32-9
		Acenaphthylene	0.29		U	23	N	N				208-96-8
		Anthracene	0.29		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.29		0.389	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.29	J	0.280	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.29		0.453	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.29	J	0.146	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.29		0.392	0.9	N	N				207-08-9
		1,1-Biphenyl	0.29		U	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	0.29		U	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	0.29		U	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	0.29		U	9.1	N	N				108-60-1
		4-Chloroaniline	0.29		U	310	N	N				106-47-8
		2-Chlorophenol	0.29		U	50	N	N				95-57-8
		Chrysene	0.29		0.550	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	0.29		U	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	0.29		U	510	N	N				95-50-1
		1,3-Dichlorobenzene	0.29		U	430	N	N				541-73-1
		1,4-Dichlorobenzene	0.29		U	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	0.29		U	1.4	N	N				91-94-1
		2,4-Dichlorophenol	0.29		U	30	N	N				120-83-2
		Diethyl phthalate	0.29		U	340	N	N				84-66-2
		2,4-Dimethyl phenol	0.29		U	1400	N	N				105-67-9
		Dimethyl phthalate	0.29		U	1900	N	N				131-11-3
		2,4-Dinitrophenol	0.29		U	160	N	N				51-28-5
		2,4-Dinitrotoluene	0.29		U	0.9	N	N				121-14-2
		Fluoranthene	0.29		0.890	20	N	N				206-44-0
		Fluorene	0.29		U	28	N	N				86-73-7
		Hexachlorobenzene	0.29		U	0.4	N	N				118-74-1
		Hexachlorobutadiene	0.29		U	8.2	N	N				87-68-3
		Hexachloroethane	0.29		U	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	0.29	J	0.192	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.29		U	123	N	N				91-57-6
		Naphthalene	0.29		U	54	N	N				91-20-3
		Pentachlorophenol	0.29		U	5.3	N	N				87-86-5
		Phenanthrene	0.29	J	0.202	40	N	N				85-01-8
		Phenol	0.29		U	6000	N	N				108-95-2
		Pyrene	0.29		0.681	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	0.29		U	96	N	N				120-82-1
		2,4,5-Trichlorophenol	0.29		U	330	N	N				95-95-4
		2,4,6- Trichlorophenol	0.29		U	58	N	N				88-06-2

J=Estimated Value

TABLE 7-55
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-6**	Soil	Acenaphthene	0.31		U	43	N	N	11/10/2005	SW8270	55270-6	83-32-9
		Acenaphthylene	0.31		U	23	N	N				208-96-8
		Anthracene	0.31		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.31	J	0.215	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.31	J	0.159	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.31		0.360	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.31		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.31	J	0.235	0.9	N	N				207-08-9
		Chrysene	0.31		0.345	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.31		U	0.4	N	N				53-70-3
		Fluoranthene	0.31		0.545	20	N	N				206-44-0
		Fluorene	0.31		U	28	N	N				86-73-7
		Indeno(1,2,3-cd)pyrene	0.31	J	0.171	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.31		U	123	N	N				91-57-6
		Naphthalene	0.31		U	54	N	N				91-20-3
		Phenanthrene	0.31		U	40	N	N				85-01-8
		Pyrene	0.31		0.448	13	N	N				129-00-0

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-7**	Soil	Acenaphthene	0.31		U	43	N	N	11/10/2005	SW8270	55270-1	83-32-9
		Acenaphthylene	0.31		U	23	N	N				208-96-8
		Anthracene	0.31	J	0.180	35	N	N				120-12-7
		Benzo(a)anthracene	0.31		1.040	0.9	Y	N				56-55-3
		Benzo(a)pyrene	0.31		0.597	0.4	Y	N				50-32-8
		Benzo(b)fluoranthene	0.31		1.560	0.9	Y	N				205-99-2
		Benzo(g,h,i)perylene	0.31		0.402	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.31		0.863	0.9	N	N				207-08-9
		Chrysene	0.31		1.310	0.4	Y	N				218-01-9
		Dibenzo(a,h)anthracene	0.31	J	0.172	0.4	N	N				53-70-3
		Fluoranthene	0.31		1.860	20	N	N				206-44-0
		Fluorene	0.31		U	28	N	N				86-73-7
		Indeno(1,2,3-cd)pyrene	0.31		0.578	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.31		U	123	N	N				91-57-6
		Naphthalene	0.31		U	54	N	N				91-20-3
		Phenanthrene	0.31	J	0.268	40	N	N				85-01-8
		Pyrene	0.31		1.900	13	N	N				129-00-0

TABLE 7-55
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-8**	Soil	Acenaphthene	0.3		U	43	N	N	11/10/2005	SW8270	55270-2	83-32-9
		Acenaphthylene	0.3		U	23	N	N				208-96-8
		Anthracene	0.3		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.3		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.3		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.3	J	0.156	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.3		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.3		U	0.9	N	N				207-08-9
		Chrysene	0.3		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.3		U	0.4	N	N				53-70-3
		Fluoranthene	0.3	J	0.250	20	N	N				206-44-0
		Fluorene	0.3		U	28	N	N				86-73-7
		Indeno(1,2,3-cd)pyrene	0.3		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.3		U	123	N	N				91-57-6
		Naphthalene	0.3		U	54	N	N				91-20-3
		Phenanthrene	0.3		U	40	N	N				85-01-8
		Pyrene	0.3	J	0.244	13	N	N				129-00-0

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-9**	Soil	Acenaphthene	0.3		U	43	N	N	11/10/2005	SW8270	55270-3	83-32-9
		Acenaphthylene	0.3		U	23	N	N				208-96-8
		Anthracene	0.3		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.3		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.3		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.3		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.3		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.3		U	0.9	N	N				207-08-9
		Chrysene	0.3		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.3		U	0.4	N	N				53-70-3
		Fluoranthene	0.3		U	20	N	N				206-44-0
		Fluorene	0.3		U	28	N	N				86-73-7
		Indeno(1,2,3-cd)pyrene	0.3		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.3		U	123	N	N				91-57-6
		Naphthalene	0.3		U	54	N	N				91-20-3
		Phenanthrene	0.3		U	40	N	N				85-01-8
		Pyrene	0.3		U	13	N	N				129-00-0

TABLE 7-55
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-10**	Soil	Acenaphthene	0.3		U	43	N	N	11/10/2005	SW8270	55270-4	83-32-9
		Acenaphthylene	0.3		U	23	N	N				208-96-8
		Anthracene	0.3		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.3		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.3		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.3		U	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.3		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.3		U	0.9	N	N				207-08-9
		Chrysene	0.3		U	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.3		U	0.4	N	N				53-70-3
		Fluoranthene	0.3		U	20	N	N				206-44-0
		Fluorene	0.3		U	28	N	N				86-73-7
		Indeno(1,2,3-cd)pyrene	0.3		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.3		U	123	N	N				91-57-6
		Naphthalene	0.3		U	54	N	N				91-20-3
		Phenanthrene	0.3		U	40	N	N				85-01-8
		Pyrene	0.3		U	13	N	N				129-00-0

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-11**	Soil	Acenaphthene	0.32		U	43	N	N	11/10/2005	SW8270	55270-5	83-32-9
		Acenaphthylene	0.32		U	23	N	N				208-96-8
		Anthracene	0.32		U	35	N	N				120-12-7
		Benzo(a)anthracene	0.32		U	0.9	N	N				56-55-3
		Benzo(a)pyrene	0.32		U	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	0.32	J	0.185	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	0.32		U	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	0.32		U	0.9	N	N				207-08-9
		Chrysene	0.32	J	0.220	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	0.32		U	0.4	N	N				53-70-3
		Fluoranthene	0.32		0.345	20	N	N				206-44-0
		Fluorene	0.32		U	28	N	N				86-73-7
		Indeno(1,2,3-cd)pyrene	0.32		U	0.9	N	N				193-39-5
		2-Methyl naphthalene	0.32		U	123	N	N				91-57-6
		Naphthalene	0.32		U	54	N	N				91-20-3
		Phenanthrene	0.32		U	40	N	N				85-01-8
		Pyrene	0.32	J	0.298	13	N	N				129-00-0

** Run for PAHs (not entire SVOCs), as per 10/19/05 Meeting Minutes.

TABLE 7-56
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NONVEG-4	Soil	Antimony	B	0.97	10	N	N	8/27/2005	6010B	635220	7440-36-0
		Arsenic		3.9	7.0	N	N				7440-38-2
		Barium	B	16.8	5500	N	N				7440-39-3
		Beryllium	B	0.46	0.4	Y	N				7440-41-7
		Cadmium	U	0.04	39	N	N				7440-43-9
		Chromium		9.9	390	N	N				7440-47-3
		Copper	E	15.7	3100	N	N				7440-50-8
		Lead	E	16.1	150	N	N				7439-92-1
		Manganese	E	168	390	N	N		7471A		7439-96-5
		Mercury		0.06	23	N	N				7439-97-6
		Nickel	E	11.8	1000	N	N				7440-02-0
		Selenium	B	1.3	390	N	N				7782-49-2
		Silver	U	0.21	200	N	N				7440-22-4
		Thallium	B	1.9	5.5	N	N				7440-28-0
		Vanadium		16.1	550	N	N				7440-62-2
		Zinc	E	30.7	6000	N	N				7440-66-6
		Cyanide	U	0.49	200	N	N				57-12-5

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-5	Soil	Antimony		6.4	10	N	N	8/27/2005	6010B	635222	7440-36-0
		Arsenic		9.7	7.0	Y	N				7440-38-2
		Barium		36.9	5500	N	N				7440-39-3
		Beryllium	B	0.39	0.4	N	N				7440-41-7
		Cadmium		0.64	39	N	N				7440-43-9
		Chromium		18	390	N	N				7440-47-3
		Copper	E	26.7	3100	N	N				7440-50-8
		Lead	E	169	150	Y	N				7439-92-1
		Manganese	E	466	390	Y	N		7471A		7439-96-5
		Mercury		0.11	23	N	N				7439-97-6
		Nickel	E	8.4	1000	N	N				7440-02-0
		Selenium		4.6	390	N	N				7782-49-2
		Silver		0.26	200	N	N				7440-22-4
		Thallium		7.6	5.5	Y	N				7440-28-0
		Vanadium		22.4	550	N	N				7440-62-2
		Zinc	E	925	6000	N	N				7440-66-6
		Cyanide		0.56	200	N	N				57-12-5

TABLE 7-56
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-6	Soil	Antimony	J	1.8	10	N	N	11/13/2005	6010B	680-10269-6	7440-36-0
		Arsenic		8.6	7.0	Y	N				7440-38-2
		Barium		29	5500	N	N				7440-39-3
		Beryllium	J	0.27	0.4	N	N				7440-41-7
		Cadmium		1.4	39	N	N				7440-43-9
		Chromium		19	390	N	N				7440-47-3
		Copper		20	3100	N	N				7440-50-8
		Lead	B	160	150	Y	N				7439-92-1
		Manganese		220	390	N	N				7439-96-5
		Mercury		0.08	23	N	N		7471A		7439-97-6
		Nickel		11	1000	N	N				7440-02-0
		Selenium	U	1	390	N	N				7782-49-2
		Silver	U	0.11	200	N	N				7440-22-4
		Thallium	U	1.5	5.5	N	N				7440-28-0
		Vanadium		26	550	N	N				7440-62-2
		Zinc		590	6000	N	N				7440-66-6
		Cyanide			200	N	N				57-12-5

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-7	Soil	Antimony	J	1.1	10	N	N	11/13/2005	6010B	680-10269-1	7440-36-0
		Arsenic		8.2	7.0	Y	N				7440-38-2
		Barium		25	5500	N	N				7440-39-3
		Beryllium	J	0.3	0.4	N	N				7440-41-7
		Cadmium		0.99	39	N	N				7440-43-9
		Chromium		14	390	N	N				7440-47-3
		Copper		20	3100	N	N				7440-50-8
		Lead		170	150	Y	N				7439-92-1
		Manganese		210	390	N	N				7439-96-5
		Mercury		0.1	23	N	N		7471A		7439-97-6
		Nickel		10	1000	N	N				7440-02-0
		Selenium	U	1.1	390	N	N				7782-49-2
		Silver	U	0.12	200	N	N				7440-22-4
		Thallium	U	1.6	5.5	N	N				7440-28-0
		Vanadium		27	550	N	N				7440-62-2
		Zinc		580	6000	N	N				7440-66-6
		Cyanide			200	N	N				57-12-5

TABLE 7-56
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-8	Soil	Antimony	J	0.65	10	N	N	11/13/2005	6010B	680-10269-2	7440-36-0
		Arsenic		7.1	7.0	Y	N				7440-38-2
		Barium		28	5500	N	N				7440-39-3
		Beryllium	J	0.48	0.4	Y	N				7440-41-7
		Cadmium	U	0.26	39	N	N				7440-43-9
		Chromium		10	390	N	N				7440-47-3
		Copper		18	3100	N	N				7440-50-8
		Lead	B	96	150	N	N				7439-92-1
		Manganese		190	390	N	N				7439-96-5
		Mercury		0.08	23	N	N		7471A		7439-97-6
		Nickel		11	1000	N	N				7440-02-0
		Selenium	U	1.1	390	N	N				7782-49-2
		Silver	U	0.12	200	N	N				7440-22-4
		Thallium	U	1.6	5.5	N	N				7440-28-0
		Vanadium		23	550	N	N				7440-62-2
		Zinc		87	6000	N	N				7440-66-6
		Cyanide			200	N	N				57-12-5

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-9	Soil	Antimony	J	0.89	10	N	N	11/13/2005	6010B	680-10269-3	7440-36-0
		Arsenic		7.7	7.0	Y	N				7440-38-2
		Barium		26	5500	N	N				7440-39-3
		Beryllium	J	0.38	0.4	N	N				7440-41-7
		Cadmium	U	0.26	39	N	N				7440-43-9
		Chromium		9.6	390	N	N				7440-47-3
		Copper		13	3100	N	N				7440-50-8
		Lead	B	95	150	N	N				7439-92-1
		Manganese		180	390	N	N				7439-96-5
		Mercury		0.066	23	N	N		7471A		7439-97-6
		Nickel		9.6	1000	N	N				7440-02-0
		Selenium	U	1	390	N	N				7782-49-2
		Silver	U	0.12	200	N	N				7440-22-4
		Thallium	U	1.5	5.5	N	N				7440-28-0
		Vanadium		26	550	N	N				7440-62-2
		Zinc		63	6000	N	N				7440-66-6
		Cyanide			200	N	N				57-12-5

TABLE 7-56
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
Metals Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-10	Soil	Antimony	J	0.57	10	N	N	11/13/2005	6010B	680-10269-4	7440-36-0
		Arsenic		6.6	7.0	N	N				7440-38-2
		Barium		23	5500	N	N				7440-39-3
		Beryllium	J	0.35	0.4	N	N				7440-41-7
		Cadmium	U	0.26	39	N	N				7440-43-9
		Chromium		8.7	390	N	N				7440-47-3
		Copper		12	3100	N	N				7440-50-8
		Lead	B	130	150	N	N				7439-92-1
		Manganese		150	390	N	N				7439-96-5
		Mercury		0.07	23	N	N		7471A		7439-97-6
		Nickel		9	1000	N	N				7440-02-0
		Selenium	U	1.1	390	N	N				7782-49-2
		Silver	U	0.12	200	N	N				7440-22-4
		Thallium	U	1.5	5.5	N	N				7440-28-0
		Vanadium		25	550	N	N				7440-62-2
		Zinc		61	6000	N	N				7440-66-6
		Cyanide			200	N	N				57-12-5

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-11	Soil	Antimony		5.6	10	N	N	11/13/2005	6010B	680-10269-5	7440-36-0
		Arsenic		6.3	7.0	N	N				7440-38-2
		Barium		180	5500	N	N				7440-39-3
		Beryllium	J	0.33	0.4	N	N				7440-41-7
		Cadmium	U	0.27	39	N	N				7440-43-9
		Chromium		10	390	N	N				7440-47-3
		Copper		37	3100	N	N				7440-50-8
		Lead	B	130	150	N	N				7439-92-1
		Manganese		140	390	N	N		7471A		7439-96-5
		Mercury		0.089	23	N	N				7439-97-6
		Nickel		9.4	1000	N	N				7440-02-0
		Selenium	U	1.1	390	N	N				7782-49-2
		Silver	U	0.12	200	N	N				7440-22-4
		Thallium	U	1.6	5.5	N	N				7440-28-0
		Vanadium		27	550	N	N				7440-62-2
		Zinc		130	6000	N	N				7440-66-6
		Cyanide			200	N	N				57-12-5

"E"= Estimated value due to the presence of interference

"B"=Result is less than the reporting limit but greater than instrument detection limit

TABLE 7-57
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
PCB Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NONVEG-4	Soil	Aroclor 1016	U	0.017							
		Aroclor 1221	U	0.017							
		Aroclor 1232	U	0.017							
		Aroclor 1242	U	0.017							
		Aroclor 1248	U	0.017							
		Aroclor 1254	U	0.017							
		Aroclor 1260	U	0.017							
		Total PCBs	U	0.18	10	N	N	8/31/2005	EPA8082	54794-2	

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-5	Soil	Aroclor 1016	U	0.18							
		Aroclor 1221	U	0.18							
		Aroclor 1232	U	0.18							
		Aroclor 1242	U	0.18							
		Aroclor 1248	U	0.18							
		Aroclor 1254	U	0.18							
		Aroclor 1260	U	0.18							
		Total PCBs	U	0.18	10	N	N	8/31/2005	EPA8082	54794-6	

TABLE 7-58
Tank Farm 5 Corrugated Shed and Non-Vegetative Area
Pesticide Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-NONVEG-4	Soil	Aldrin	0.011	U	NA	NA	N	8/31/2005	EPA 8081	54794-2	309-00-2
		a-BHC	0.011	U	NA	NA	N				319-84-6
		b-BHC	0.011	U	NA	NA	N				319-85-7
		d-BHC	0.011	U	NA	NA	N				319-86-8
		g-BHC	0.011	U	NA	NA	N				58-89-9
		4,4'-DDD	0.011	U	NA	NA	N				72-54-8
		4,4'-DDE	0.011	0.156	NA	NA	N				72-55-9
		4,4'-DDT	0.011	0.13	NA	NA	N				50-29-3
		Dieldrin	0.011	U	0.04	N	N				60-57-1
		Endosulfan I	0.011	U	NA	NA	N				959-98-8
		Endosulfan II	0.011	U	NA	NA	N				33213-65-9
		Endosulfan sulfate	0.011	U	NA	NA	N				1031-07-8
		Endrin	0.011	U	NA	NA	N				72-20-8
		Endrin aldehyde	0.011	U	NA	NA	N				7421-93-4
		Endrin ketone	0.011	U	NA	NA	N				53494-70-5
		Heptachlor	0.011	U	NA	NA	N				76-44-8
		Heptachlor epoxide (B)	0.011	U	NA	NA	N				1024-57-3
		Methoxychlor	0.017	U	NA	NA	N				72-43-5
		Chlordane	0.036	U	0.50	N	N				
		Toxaphene	0.073	U	NA	NA	N				8001-35-2

SAMPLE ID	MATRIX	PARAMETER	QUAT (ppm)	RESULT (ppm)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue (Y/N)?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-L-SHED-5	Soil	Aldrin	0.12	U	NA	NA	Y	8/31/2005	EPA 8081	54794-6	309-00-2
		a-BHC	0.12	U	NA	NA	Y				319-84-6
		b-BHC	0.12	U	NA	NA	N				319-85-7
		d-BHC	0.12	U	NA	NA	N				319-86-8
		g-BHC	0.12	U	NA	NA	N				58-89-9
		4,4'-DDD	0.12	U	NA	NA	N				72-54-8
		4,4'-DDE	0.12	0.156	NA	NA	N				72-55-9
		4,4'-DDT	0.12	0.13	NA	NA	N				50-29-3
		Dieldrin	0.12	U	0.04	N	Y				60-57-1
		Endosulfan I	0.12	U	NA	NA	N				959-98-8
		Endosulfan II	0.12	U	NA	NA	N				33213-65-9
		Endosulfan sulfate	0.12	U	NA	NA	N				1031-07-8
		Endrin	0.12	U	NA	NA	N				72-20-8
		Endrin aldehyde	0.12	U	NA	NA	N				7421-93-4
		Endrin ketone	0.12	U	NA	NA	N				53494-70-5
		Heptachlor	0.12	U	NA	NA	Y				76-44-8
		Heptachlor epoxide (B)	0.12	U	NA	NA	Y				1024-57-3
		Methoxychlor	0.18	U	NA	NA	N				72-43-5
		Chlordane	0.4	U	0.50	N	N				
		Toxaphene	0.79	U	NA	NA	Y				8001-35-2

TABLE 7-59
Tank Farm 4 Fenceline Survey
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-Fence-1	Soil	Total Petroleum Hydrocarbons (TPH)		50	500	N	N	11/13/2004	SW8015B	598184	
TF4-Fence-2	Soil	Total Petroleum Hydrocarbons (TPH)		134	500	N	N	11/13/2004	SW8015B	598185	
TF4-Fence-3	Soil	Total Petroleum Hydrocarbons (TPH)		62	500	N	N	11/13/2004	SW8015B	598186	
TF4-Fence-4	Soil	Total Petroleum Hydrocarbons (TPH)	U	24	500	N	N	12/1/2004	SW8015B	598953	
TF4-Fence-5	Soil	Total Petroleum Hydrocarbons (TPH)		54	500	N	N	12/1/2004	SW8015B	598954	

TABLE 7-60
Tank Farm 4 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-Fence-1	Soil	Acenaphthene	U	0.3	43	N	N	11/18/2004	SW8270	53026-1	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 7-60
Tank Farm 4 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-Fence-2	Soil	Acenaphthene	U	0.33	43	N	N	11/18/2004	SW8270	53026-2	83-32-9
		Acenaphthylene	U	0.33	23	N	N				208-96-8
		Anthracene	U	0.33	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.33	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.33	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.33	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.33	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.33	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.33	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.33	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.33	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.33	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.33	310	N	N				106-47-8
		2-Chlorophenol	U	0.33	50	N	N				95-57-8
		Chrysene	U	0.33	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.33	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.33	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.33	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.33	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.33	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.33	30	N	N				120-83-2
		Diethyl phthalate	U	0.33	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.33	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.33	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.33	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.33	0.9	N	N				121-14-2
		Fluoranthene	U	0.33	20	N	N				206-44-0
		Fluorene	U	0.33	28	N	N				86-73-7
		Hexachlorobenzene	U	0.33	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.33	8.2	N	N				87-68-3
		Hexachloroethane	U	0.33	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.33	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.33	123	N	N				91-57-6
		Naphthalene	U	0.33	54	N	N				91-20-3
		Pentachlorophenol	U	0.33	5.3	N	N				87-86-5
		Phenanthrene	U	0.33	40	N	N				85-01-8
		Phenol	U	0.33	6000	N	N				108-95-2
		Pyrene	U	0.33	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.33	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.33	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.33	58	N	N				88-06-2

TABLE 7-60
Tank Farm 4 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-Fence-3	Soil	Acenaphthene	U	0.3	43	N	N	11/18/2004	SW8270	53026-3	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 7-60
Tank Farm 4 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-Fence-4	Soil	Acenaphthene	U	0.31	43	N	N	11/19/2004	SW8270	53046-1	83-32-9
		Acenaphthylene	U	0.31	23	N	N				208-96-8
		Anthracene	U	0.31	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.31	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.31	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.31	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.31	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.31	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.31	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.31	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.31	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.31	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.31	310	N	N				106-47-8
		2-Chlorophenol	U	0.31	50	N	N				95-57-8
		Chrysene	U	0.31	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.31	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.31	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.31	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.31	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.31	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.31	30	N	N				120-83-2
		Diethyl phthalate	U	0.31	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.31	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.31	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.31	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.31	0.9	N	N				121-14-2
		Fluoranthene	U	0.31	20	N	N				206-44-0
		Fluorene	U	0.31	28	N	N				86-73-7
		Hexachlorobenzene	U	0.31	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.31	8.2	N	N				87-68-3
		Hexachloroethane	U	0.31	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.31	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.31	123	N	N				91-57-6
		Naphthalene	U	0.31	54	N	N				91-20-3
		Pentachlorophenol	U	0.31	5.3	N	N				87-86-5
		Phenanthrene	U	0.31	40	N	N				85-01-8
		Phenol	U	0.31	6000	N	N				108-95-2
		Pyrene	U	0.31	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.31	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.31	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.31	58	N	N				88-06-2

TABLE 7-60
Tank Farm 4 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-Fence-5	Soil	Acenaphthene	U	0.33	43	N	N	11/19/2004	SW8270	53046-2	83-32-9
		Acenaphthylene	U	0.33	23	N	N				208-96-8
		Anthracene	U	0.33	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.33	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.33	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.33	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.33	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.33	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.33	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.33	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.33	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.33	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.33	310	N	N				106-47-8
		2-Chlorophenol	U	0.33	50	N	N				95-57-8
		Chrysene	U	0.33	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.33	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.33	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.33	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.33	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.33	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.33	30	N	N				120-83-2
		Diethyl phthalate	U	0.33	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.33	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.33	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.33	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.33	0.9	N	N				121-14-2
		Fluoranthene	U	0.33	20	N	N				206-44-0
		Fluorene	U	0.33	28	N	N				86-73-7
		Hexachlorobenzene	U	0.33	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.33	8.2	N	N				87-68-3
		Hexachloroethane	U	0.33	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.33	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.33	123	N	N				91-57-6
		Naphthalene	U	0.33	54	N	N				91-20-3
		Pentachlorophenol	U	0.33	5.3	N	N				87-86-5
		Phenanthrene	U	0.33	40	N	N				85-01-8
		Phenol	U	0.33	6000	N	N				108-95-2
		Pyrene	U	0.33	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.33	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.33	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.33	58	N	N				88-06-2

TABLE 7-61
Tank Farm 4 Fenceline Survey
Lead Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-Fence-1	Soil	Lead		259	150	Y	N	11/23/2004	SW6010B	598184	7439-92-1
TF4-Fence-2	Soil	Lead		758	150	Y	N	11/23/2004	SW6010B	598185	7439-92-1
TF4-Fence-3	Soil	Lead		591	150	Y	N	11/23/2004	SW6010B	598186	7439-92-1
TF4-Fence-4	Soil	Lead		408	150	Y	N	12/1/2004	SW6010B	598953	7439-92-1
TF4-Fence-5	Soil	Lead		934	150	Y	N	12/1/2004	SW6010B	598954	7439-92-1
TF4-FENCE-1A	Soil	Lead		136000	150	Y	N		SW6010B	611088	7439-92-1
TF4-FENCE-2A	Soil	Lead		144000	150	Y	N		SW6010B	611089	7439-92-1
TF4-FENCE-3A	Soil	Lead		135000	150	Y	N		SW6010B	611090	7439-92-1

TABLE 7-62
Tank Farm 4 Fenceline Survey
PCB Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF4-Fence-1	Soil	Total PCBs	U	0.018	10	N	N	11/17/2004	EPA 8082	598184	
TF4-Fence-2	Soil	Total PCBs	U	0.026	10	N	N	11/16/2004	EPA 8082	598185	
TF4-Fence-3	Soil	Total PCBs	U	0.018	10	N	N	11/16/2004	EPA 8082	598186	
TF4-Fence-4	Soil	Total PCBs	U	0.018	10	N	N	12/1/2004	EPA 8082	598953	
TF4-Fence-5	Soil	Total PCBs	U	0.02	10	N	N	12/1/2004	EPA 8082	598954	

TABLE 7-63
Tank Farm 5 Fenceline Survey
TPH Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-Fence-1	Soil	Total Petroleum Hydrocarbons (TPH)		108	500	N	N	11/13/2004	SW8015B	53026-4	
TF5-Fence-2	Soil	Total Petroleum Hydrocarbons (TPH)		161	500	N	N	11/13/2004	SW8015B	53026-5	
TF5-Fence-3	Soil	Total Petroleum Hydrocarbons (TPH)		155	500	N	N	11/13/2004	SW8015B	53026-6	
TF5-Fence-4	Soil	Total Petroleum Hydrocarbons (TPH)	U	108	500	N	N	11/13/2004	SW8015B	53026-7	
TF5-Fence-4D	Soil	Total Petroleum Hydrocarbons (TPH)	U	111	500	N	N	11/13/2004	SW8015B	53026-9	
TF5-Fence-5	Soil	Total Petroleum Hydrocarbons (TPH)		104	500	N	N	11/13/2004	SW8015B	53026-8	

TABLE 7-64
Tank Farm 5 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-Fence-1	Soil	Acenaphthene	U	0.29	43	N	N	11/18/2004	SW8270	53026-4	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 7-64
Tank Farm 5 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-Fence-2	Soil	Acenaphthene	U	0.29	43	N	N	11/18/2004	SW8270	53026-5	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 7-64
Tank Farm 5 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-Fence-3	Soil	Acenaphthene	U	0.3	43	N	N	11/18/2004	SW8270	53026-6	83-32-9
		Acenaphthylene	U	0.3	23	N	N				208-96-8
		Anthracene	U	0.3	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.3	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.3	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.3	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.3	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.3	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.3	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.3	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.3	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.3	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.3	310	N	N				106-47-8
		2-Chlorophenol	U	0.3	50	N	N				95-57-8
		Chrysene	U	0.3	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.3	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.3	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.3	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.3	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.3	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.3	30	N	N				120-83-2
		Diethyl phthalate	U	0.3	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.3	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.3	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.3	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.3	0.9	N	N				121-14-2
		Fluoranthene	U	0.3	20	N	N				206-44-0
		Fluorene	U	0.3	28	N	N				86-73-7
		Hexachlorobenzene	U	0.3	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.3	8.2	N	N				87-68-3
		Hexachloroethane	U	0.3	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.3	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.3	123	N	N				91-57-6
		Naphthalene	U	0.3	54	N	N				91-20-3
		Pentachlorophenol	U	0.3	5.3	N	N				87-86-5
		Phenanthrene	U	0.3	40	N	N				85-01-8
		Phenol	U	0.3	6000	N	N				108-95-2
		Pyrene	U	0.3	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.3	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.3	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.3	58	N	N				88-06-2

TABLE 7-64
Tank Farm 5 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-Fence-4	Soil	Acenaphthene	U	0.29	43	N	N	11/18/2004	SW8270	53026-7	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 7-64
Tank Farm 5 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-Fence-4D	Soil	Acenaphthene	U	0.29	43	N	N	11/18/2004	SW8270	53026-9	83-32-9
		Acenaphthylene	U	0.29	23	N	N				208-96-8
		Anthracene	U	0.29	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.29	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.29	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.29	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.29	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.29	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.29	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.29	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.29	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.29	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.29	310	N	N				106-47-8
		2-Chlorophenol	U	0.29	50	N	N				95-57-8
		Chrysene	U	0.29	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.29	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.29	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.29	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.29	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.29	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.29	30	N	N				120-83-2
		Diethyl phthalate	U	0.29	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.29	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.29	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.29	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.29	0.9	N	N				121-14-2
		Fluoranthene	U	0.29	20	N	N				206-44-0
		Fluorene	U	0.29	28	N	N				86-73-7
		Hexachlorobenzene	U	0.29	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.29	8.2	N	N				87-68-3
		Hexachloroethane	U	0.29	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.29	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.29	123	N	N				91-57-6
		Naphthalene	U	0.29	54	N	N				91-20-3
		Pentachlorophenol	U	0.29	5.3	N	N				87-86-5
		Phenanthrene	U	0.29	40	N	N				85-01-8
		Phenol	U	0.29	6000	N	N				108-95-2
		Pyrene	U	0.29	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.29	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.29	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.29	58	N	N				88-06-2

TABLE 7-64
Tank Farm 5 Fenceline Survey
SVOC Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-Fence-5	Soil	Acenaphthene	U	0.27	43	N	N	11/18/2004	SW8270	53026-8	83-32-9
		Acenaphthylene	U	0.27	23	N	N				208-96-8
		Anthracene	U	0.27	35	N	N				120-12-7
		Benzo(a)anthracene	U	0.27	0.9	N	N				56-55-3
		Benzo(a)pyrene	U	0.27	0.4	N	N				50-32-8
		Benzo(b)fluoranthene	U	0.27	0.9	N	N				205-99-2
		Benzo(g,h,i)perylene	U	0.27	0.8	N	N				191-24-2
		Benzo(k)fluoranthene	U	0.27	0.9	N	N				207-08-9
		1,1-Biphenyl	U	0.27	0.8	N	N				92-52-4
		bis(2-Ethylhexyl)phthalate	U	0.27	46	N	N				117-81-7
		bis(2-Chloroethyl)ether	U	0.27	0.6	N	N				111-44-4
		bis(2-chloroisopropyl)ether	U	0.27	9.1	N	N				108-60-1
		4-Chloroaniline	U	0.27	310	N	N				106-47-8
		2-Chlorophenol	U	0.27	50	N	N				95-57-8
		Chrysene	U	0.27	0.4	N	N				218-01-9
		Dibenzo(a,h)anthracene	U	0.27	0.4	N	N				53-70-3
		1,2-Dichlorobenzene	U	0.27	510	N	N				95-50-1
		1,3-Dichlorobenzene	U	0.27	430	N	N				541-73-1
		1,4-Dichlorobenzene	U	0.27	27	N	N				106-46-7
		3,3'-Dichlorobenzidine	U	0.27	1.4	N	N				91-94-1
		2,4-Dichlorophenol	U	0.27	30	N	N				120-83-2
		Diethyl phthalate	U	0.27	340	N	N				84-66-2
		2,4-Dimethyl phenol	U	0.27	1400	N	N				105-67-9
		Dimethyl phthalate	U	0.27	1900	N	N				131-11-3
		2,4-Dinitrophenol	U	0.27	160	N	N				51-28-5
		2,4-Dinitrotoluene	U	0.27	0.9	N	N				121-14-2
		Fluoranthene	U	0.27	20	N	N				206-44-0
		Fluorene	U	0.27	28	N	N				86-73-7
		Hexachlorobenzene	U	0.27	0.4	N	N				118-74-1
		Hexachlorobutadiene	U	0.27	8.2	N	N				87-68-3
		Hexachloroethane	U	0.27	46	N	N				67-72-1
		Indeno(1,2,3-cd)pyrene	U	0.27	0.9	N	N				193-39-5
		2-Methyl naphthalene	U	0.27	123	N	N				91-57-6
		Naphthalene	U	0.27	54	N	N				91-20-3
		Pentachlorophenol	U	0.27	5.3	N	N				87-86-5
		Phenanthrene	U	0.27	40	N	N				85-01-8
		Phenol	U	0.27	6000	N	N				108-95-2
		Pyrene	U	0.27	13	N	N				129-00-0
		1,2,4-Trichlorobenzene	U	0.27	96	N	N				120-82-1
		2,4,5-Trichlorophenol	U	0.27	330	N	N				95-95-4
		2,4,6-Trichlorophenol	U	0.27	58	N	N				88-06-2

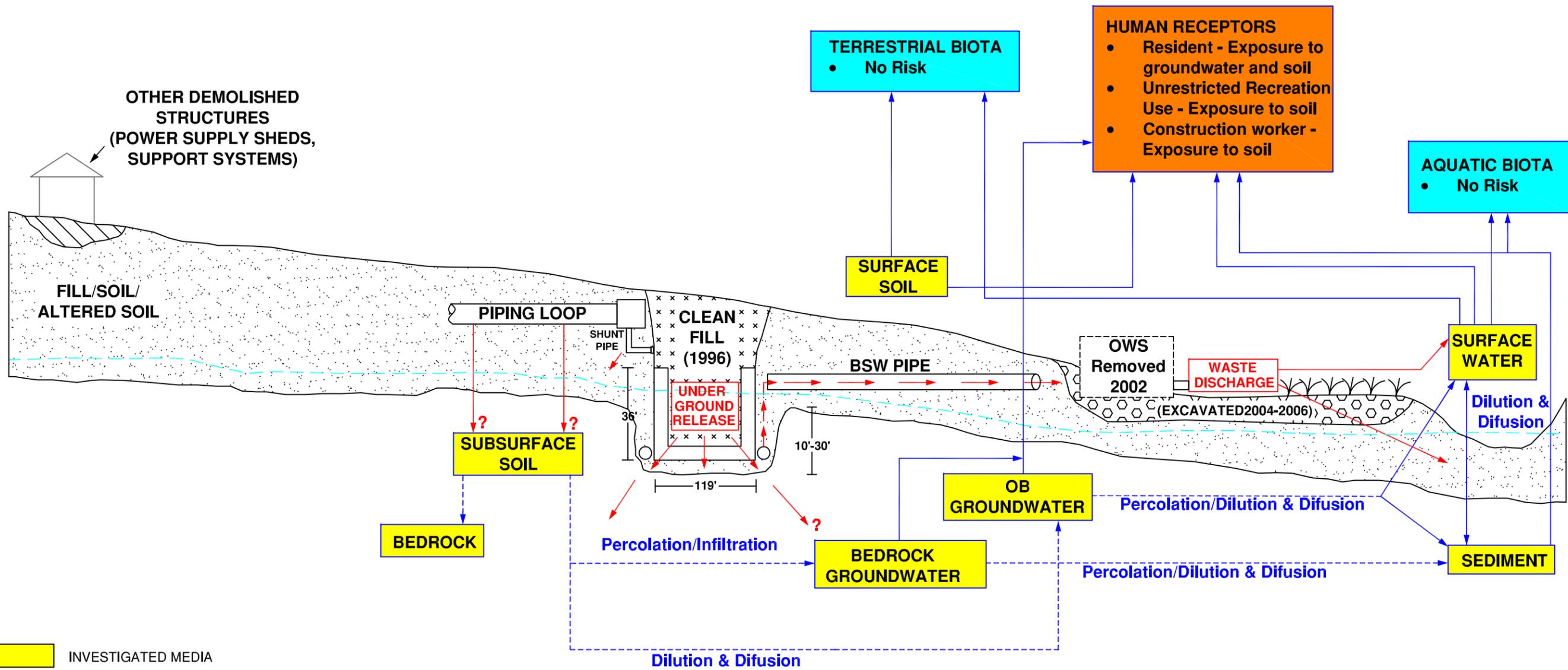
TABLE 7-65
Tank Farm 5 Fenceline Survey
Lead Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-Fence-1	Soil	Lead		137	150	N	N	11/23/2004	SW6010B	598187	7439-92-1
TF5-Fence-2	Soil	Lead		168	150	Y	N	11/23/2004	SW6010B	598188	7439-92-1
TF5-Fence-3	Soil	Lead		109	150	N	N	11/23/2004	SW6010B	598189	7439-92-1
TF5-Fence-4	Soil	Lead		149	150	N	N	11/23/2004	SW6010B	598190	7439-92-1
TF5-Fence-4D	Soil	Lead		139	150	N	N	11/23/2004	SW6010B	598192	7439-92-1
TF5-Fence-5	Soil	Lead		319	150	Y	N	11/23/2004	SW6010B	598191	7439-92-1
TF5-FENCE-1A	Soil	Lead		138000	150	Y	N		SW6010B	611340	7439-92-1

TABLE 7-66
Tank Farm 5 Fenceline Survey
PCB Analytical Data

SAMPLE ID	MATRIX	PARAMETER	QUAL	RESULT (mg/kg)	RIDEM Residential Criteria (mg/kg)	Exceed RIDEM Residential Criteria? (Y/N)	Reporting Limit Issue?	Date Analyzed	Method	Lab ID#	CAS NOS
TF5-Fence-1	Soil	Total PCBs	U	0.017	10	N	N	11/17/2004	EPA 8082	53026-4	
TF5-Fence-2	Soil	Total PCBs	U	0.018	10	N	N	11/17/2004	EPA 8082	53026-5	
TF5-Fence-3	Soil	Total PCBs	U	0.018	10	N	N	11/17/2004	EPA 8082	53026-6	
TF5-Fence-4	Soil	Total PCBs	U	0.017	10	N	N	11/17/2004	EPA 8082	53026-7	
TF5-Fence-4D	Soil	Total PCBs	U	0.017	10	N	N	11/17/2004	EPA 8082	53026-9	
TF5-Fence-5	Soil	Total PCBs	U	0.017	10	N	N	11/17/2004	EPA 8082	53026-8	

A3 - CONCEPTUAL SITE MODEL



- INVESTIGATED MEDIA
- NO RISK IDENTIFIED FOR THESE RECEPTORS
- POTENTIAL RISK IDENTIFIED FOR THESE RECEPTORS
- GROUNDWATER TABLE
- RED TEXT/ARROWS = FORMER CONTAMINANT SOURCE/DISCHARGE ROUTE
- BLUE TEXT/ARROWS = FATE AND TRANSPORT ROUTE CONSIDERED AND EVALUATED
- OVS FORMER BURN CHAMBER, CONVERTED TO OIL WATER SEPARATOR, LATER DEMOLISHED AND REMOVED



NAVAL STATION NEWPORT
 PORTSMOUTH, RHODE ISLAND

CONCEPTUAL SITE MODEL

DU 4-1, SITE 12 - TANK FARM 4
 FEASIBILITY STUDY, APPENDIX A3

SCALE PER SCALE BAR	
FILE I:\02698\F.S.DR.12\CSM_TF4_SITE12.DWG	
REV 0	DATE 7/16/12
FIGURE NUMBER A3-1	

A4 - CHEMICAL DATA FROM THE DATA GAPS ASSESSMENT

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
PAGE 1 of 40

SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
LOCATION ID			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
SAMPLE DATE			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
VOLATILES (UG/KG)										
1,1,1-TRICHLOROETHANE	8700000	38000000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,1,2,2-TETRACHLOROETHANE	560	2800	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,1,2-TRICHLOROETHANE	1100	5300	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,1-DICHLOROETHANE	3300	17000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,1-DICHLOROETHENE	240000	1100000	5 UJ	5.7 UJ	4.9 U	5.6 U	5.2 U	5.6 UJ	7.3 U	7.7 U
1,2,3-TRICHLOROBENZENE	49000	490000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,2,4-TRICHLOROBENZENE	22000	99000	5 UJ	5.7 UJ	4.9 UJ	5.6 UJ	5.2 UJ	5.6 UJ	7.3 UJ	7.7 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	5 UJ	5.7 U	4.9 U	5.6 U	5.2 U	5.6 UJ	7.3 U	7.7 U
1,2-DIBROMOETHANE	34	170	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,2-DICHLOROBENZENE	1900000	9800000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,2-DICHLOROETHANE	430	2200	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,2-DICHLOROPROPANE	890	4500	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,3-DICHLOROBENZENE			5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
1,4-DICHLOROBENZENE	2400	12000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
2-BUTANONE	28000000	200000000	5 U	5.7 UJ	4.9 U	5.6 U	3 J	5.6 U	9.6	150
2-HEXANONE	210000	1400000	5 UJ	5.7 UJ	4.9 UJ	5.6 UJ	5.2 UJ	5.6 UJ	7.3 UJ	7.7 UJ
4-METHYL-2-PENTANONE	5300000	53000000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
ACETONE	61000000	630000000	8.4 J	5.7 UJ	4.9 UJ	6.2 J	20 J	5.6 UJ	31 J	56 J
BENZENE	1100	5400	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
BROMOCHLOROMETHANE			5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
BROMODICHLOROMETHANE	270	1400	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

**TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
PAGE 2 of 40**

SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
LOCATION ID										
SAMPLE DATE			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
BROMOFORM	61000	220000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
BROMOMETHANE	7300	32000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
BTEX			2 J	5.7 U	1.2 J	2 J	5.2 U	5.6 U	2 J	7.7 U
CARBON DISULFIDE	820000	3700000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
CARBON TETRACHLORIDE	610	3000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
CHLOROBENZENE	290000	1400000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
CHLORODIBROMOMETHANE	680	3300	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
CHLOROETHANE	15000000	61000000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
CHLOROFORM	290	1500	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
CHLOROMETHANE	120000	500000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
CIS-1,2-DICHLOROETHENE	780000	10000000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
CIS-1,3-DICHLOROPROPENE	1700	8100	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
CYCLOHEXANE	7000000	29000000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
DICHLORODIFLUOROMETHANE	180000	780000	5 UJ	5.7 UJ	4.9 U	5.6 U	5.2 U	5.6 UJ	7.3 U	7.7 U
ETHYLBENZENE	5400	27000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
ISOPROPYLBENZENE	2100000	11000000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
M+P-XYLENES			2 J	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
METHYL ACETATE	78000000	1E+09	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
METHYL CYCLOHEXANE			5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
METHYL TERT-BUTYL ETHER	43000	220000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
METHYLENE CHLORIDE	11000	53000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
O-XYLENE	3800000	19000000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
STYRENE	6300000	36000000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
LOCATION ID			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
SAMPLE DATE			0 FT							
TOP DEPTH			1 FT							
BOTTOM DEPTH			NORMAL							
SACODE			NM							
QC TYPE										
TETRACHLOROETHENE	550	2600	5 U	5.7 UJ	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
TOLUENE	5000000	45000000	5 U	5.7 U	1.2 J	2 J	5.2 U	5.6 U	2 J	7.7 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
TOTAL CHLORINATED ETHENES			5 UJ	5.7 UJ	4.9 U	5.6 U	5.2 U	5.6 UJ	7.3 U	7.7 U
TOTAL CHLORINATED VOCS			5 UJ	5.7 UJ	4.9 UJ	5.6 UJ	5.2 UJ	5.6 UJ	7.3 UJ	7.7 UJ
TOTAL XYLENES	630000	2700000	2 J	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
TRANS-1,2-DICHLOROETHENE	150000	690000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
TRICHLOROETHENE	2800	14000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
TRICHLOROFLUOROMETHANE	790000	3400000	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
VINYL CHLORIDE	60	1700	5 U	5.7 U	4.9 U	5.6 U	5.2 U	5.6 U	7.3 U	7.7 U
SEMIVOLATILES (UG/KG)										
1,1-BIPHENYL	3900000	51000000	330 U	330 U	420 UJ	500 UJ	470 U	480 U	500 UJ	490 UJ
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 UJ	3.3 UJ	4.3 U	5.1 U	4.7 U	4.8 U	5.1 U	5 U
1,4-DIOXANE	44000	160000	3.3 U	3.3 U	4.3 U	5.1 U	4.7 U	4.8 U	5.1 U	5 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	330 UJ	420 UJ	500 UJ	470 U	480 U	500 UJ	490 UJ
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	3.3 U	4.3 UJ	5.1 UJ	4.7 UJ	4.8 UJ	5.1 UJ	5 UJ
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	670 U	860 U	1000 U	950 U	980 U	1000 U	1000 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	3.3 U	4.3 UJ	5.1 UJ	4.7 UJ	4.8 UJ	5.1 UJ	5 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
LOCATION ID			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
SAMPLE DATE			0 FT							
TOP DEPTH			1 FT							
BOTTOM DEPTH			NORMAL							
SACODE			NM							
QC TYPE										
2,4-DIMETHYLPHENOL	1200000	12000000	330 UJ	330 UJ	420 UJ	500 UJ	4.7 UJ	4.8 UJ	500 UJ	490 UJ
2,4-DINITROPHENOL	120000	1200000	670 UJ	670 UJ	860 UJ	1000 UJ	950 UJ	980 UJ	1000 UJ	1000 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
2,6-DINITROTOLUENE	61000	620000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
2-CHLOROPHENOL	390000	5100000	5.4	3.3 U	4.3 U	5.1 U	4.7 U	6.6	5.1 U	5 U
2-METHYLNAPHTHALENE	310000	4100000	5.4 J	3.3 UJ	4.3 U	5.1 U	4.7 U	4.8 U	5.1 U	5 U
2-METHYLPHENOL	3100000	31000000	3.3 UJ	3.3 UJ	420 U	500 U	4.7 U	4.8 U	500 U	490 U
2-NITROANILINE	610000	6000000	670 U	670 U	860 U	1000 U	950 U	980 U	1000 U	1000 U
2-NITROPHENOL			330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
3,3'-DICHLOROBENZIDINE	1100	3800	330 U	330 U	420 U	500 U	470 U	480 UJ	500 U	490 U
3-NITROANILINE			670 U	670 U	860 U	1000 U	950 U	980 U	1000 U	1000 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	670 UJ	860 U	1000 U	950 UJ	980 U	1000 U	1000 U
4-BROMOPHENYL PHENYL ETHER			330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	3.3 U	4.3 UJ	5.1 UJ	4.7 UJ	4.8 UJ	5.1 UJ	5 UJ
4-CHLOROANILINE	2400	8600	330 UJ	330 UJ	420 UJ	500 UJ	470 UJ	480 UJ	500 UJ	490 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	3.3 UJ	4.3 UJ	5.1 UJ	4.7 U	4.8 U	5.1 UJ	5 UJ
4-NITROANILINE	24000	86000	670 U	670 U	860 U	1000 U	950 U	980 U	1000 U	1000 U
4-NITROPHENOL			670 UJ	670 UJ	860 U	1000 U	950 UJ	980 U	1000 U	1000 U
ACENAPHTHENE	3400000	33000000	6.2	6.8	4.3 U	5.1 U	6.4	4.8 U	5.1 U	5 U
ACENAPHTHYLENE	3400000	33000000	24	35	6.5	34	19	4.8 U	31	14
ACETOPHENONE	7800000	100000000	330 U	330 U	420 UJ	500 UJ	470 U	480 U	500 UJ	490 UJ

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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
LOCATION ID										
SAMPLE DATE			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
ANTHRACENE	17000000	170000000	48	37	6.1	25	38	4.8 U	28	21
ATRAZINE	2100	7500	3.3 U	3.3 U	4.3 U	5.1 U	4.7 U	4.8 U	5.1 U	5 U
BENZALDEHYDE	7800000	100000000	330 UJ	330 UJ	420 UJ	500 UJ	470 UJ	480 UJ	500 UJ	490 UJ
BENZO(A)ANTHRACENE	150	2100	160	150	29	94	130	17	110	48
BENZO(A)PYRENE	15	210	130	130	34 J	130 J	120 J	15 J	150 J	40 J
BENZO(B)FLUORANTHENE	150	2100	210	170	60 J	170 J	190 J	27 J	220 J	67 J
BENZO(G,H,I)PERYLENE	1700000	17000000	72	98	28	110	84	13	120	47
BENZO(K)FLUORANTHENE	1500	21000	210	180	21	130	83	17	130	30
BIS(2-CHLOROETHOXY)METHAN E	180000	1800000	330 UJ	330 UJ	420 U	500 U	470 U	480 U	500 U	490 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	330 UJ	420 U	500 U	470 U	480 U	500 U	490 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	330 U	420 U	130 J	470 U	480 U	77 J	490 U
BUTYL BENZYL PHTHALATE	260000	910000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
CAPROLACTAM	31000000	310000000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
CARBAZOLE			330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
CHRYSENE	15000	210000	160	140	32	150	130	19	150	53
DIBENZO(A,H)ANTHRACEN E	15	210	34	47	7.1 J	25 J	24 J	4.8 U	29 J	16 J
DIBENZOFURAN	78000	1000000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
DIETHYL PHTHALATE	49000000	490000000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
DIMETHYL PHTHALATE			330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	330 U	420 U	500 U	470 U	78 J	500 U	490 U
DI-N-OCTYL PHTHALATE			330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
FLUORANTHENE	2300000	22000000	160	210	57	220	230	33	240	68

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

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ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
LOCATION ID										
SAMPLE DATE			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
FLUORENE	2300000	22000000	11	11	4.3 U	8.4	12	4.8 U	10	5 U
HEXACHLOROBENZENE	300	1100	3.3 U	3.3 U	4.3 U	5.1 U	4.7 U	4.8 U	5.1 U	5 U
HEXACHLOROBUTADIENE	6200	22000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	330 UJ	420 UJ	500 UJ	470 UJ	480 UJ	500 UJ	490 UJ
HEXACHLOROETHANE	35000	120000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
HIGH MOLECULAR WEIGHT PAHS			1360	1420	341 J	1310 J	1260 J	181 J	1460 J	461 J
INDENO(1,2,3-CD)PYRENE	150	2100	72	87	25 J	90 J	74 J	11 J	110 J	33 J
ISOPHORONE	510000	1800000	330 UJ	330 UJ	420 U	500 U	470 U	480 U	500 U	490 U
LOW MOLECULAR WEIGHT PAHS			195 J	194 J	34.6	149	195	14	169	65
NAPHTHALENE	3600	18000	6.2	4.5	4.3 U	5.8 U	4.7 U	4.8 U	5.1 U	5 U
NITROBENZENE	4800	24000	330 UJ	330 UJ	420 UJ	500 UJ	470 U	480 U	500 UJ	490 UJ
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	330 UJ	420 U	500 U	470 U	480 U	500 U	490 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U
PENTACHLOROPHENOL	3000	9000	670 UJ	670 UJ	43 U	51 U	47 U	48 U	51 U	50 U
PHENANTHRENE	1700000	17000000	94	100	22	82	120	14	100	30
PHENOL	18000000	180000000	31	26	4.3 U	5.1 U	4.7 U	4.8 U	5.1 U	5 U
PYRENE	1700000	17000000	150	210	48	190	200	29	200	59
TOTAL CARCINOGENIC PAHS-HALFND	15	210	976	904	208 J	789 J	751 J	108 J	899 J	287 J
TOTAL CARCINOGENIC PAHS-POS	15	210	976	904	208 J	789 J	751 J	106 J	899 J	287 J
TOTAL CHLORINATED VOCS			330 U	330 U	420 U	500 U	470 U	480 U	500 U	490 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
LOCATION ID			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
SAMPLE DATE			0 FT							
TOP DEPTH			1 FT							
BOTTOM DEPTH			NORMAL							
SACODE			NM							
QC TYPE										
TOTAL PAHS			1550 J	1620 J	376 J	1460 J	1460 J	195 J	1630 J	526 J
PESTICIDES/PCBS (UG/KG)										
4,4'-DDD	2000	7200	3.3 U	6.4 J	4.3 U	5.1 U	6	4.8 U	5 U	5 U
4,4'-DDE	1400	5100	3.3 U	10 J	4.3 U	9.9	4.8 U	4.8 U	5.1 J	5 U
4,4'-DDT	1700	7000	3.3 U	3.3 U	4.3 U	5.1 U	4.8 U	4.8 U	5 U	5 U
ALDRIN	29	100	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
ALPHA-BHC	77	270	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
ALPHA-CHLORDANE	1600	6500	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
AROCLOR-1016	3900	21000	33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
AROCLOR-1221	140	540	33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
AROCLOR-1232	140	540	33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
AROCLOR-1242	220	740	33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
AROCLOR-1248	220	740	33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
AROCLOR-1254	220	740	33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
AROCLOR-1260	220	740	33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
AROCLOR-1262			33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
AROCLOR-1268			33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
BETA-BHC	270	960	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
DELTA-BHC	77	270	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
DIENDRIN	30	110	3.3 U	3.3 U	4.3 U	5.1 U	4.8 U	4.8 U	5 U	5 U
ENDOSULFAN I	370000	3700000	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
ENDOSULFAN II	370000	3700000	3.3 U	3.3 U	4.3 U	5.1 U	4.8 U	4.8 U	5 U	5 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	3.3 U	4.3 U	5.1 U	4.8 U	4.8 U	5 U	5 U
ENDRIN	18000	180000	3.3 U	3.3 U	4.3 U	5.1 U	4.8 U	4.8 U	5 U	5 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	3.3 U	4.3 U	5.1 U	4.8 U	4.8 U	5 U	5 U
ENDRIN KETONE	18000	180000	3.3 U	3.7 J	4.3 U	5.1 U	4.8 U	4.8 U	5 U	5 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
LOCATION ID										
SAMPLE DATE			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
GAMMA-BHC (LINDANE)	520	2100	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
GAMMA-CHLORDANE	1600	6500	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
HEPTACHLOR	110	380	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
HEPTACHLOR EPOXIDE	53	190	1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
METHOXYCHLOR	310000	3100000	17 U	17 U	22 U	26 U	24 U	25 U	26 U	26 U
TOTAL AROCLOR	220	740	33 U	33 U	43 U	51 U	48 U	48 U	50 U	50 U
TOTAL CHLORDANE			1.7 U	1.7 U	2.2 U	2.6 U	2.4 U	2.5 U	2.6 U	2.6 U
TOTAL DDD/DDE/DDT			3.3 U	16.4 J	4.3 U	9.9	6	4.8 U	5.1 J	5 U
TOXAPHENE	440	1600	170 U	170 U	220 U	260 U	240 U	250 U	260 U	260 U
METALS (MG/KG)										
ALUMINUM	77000	990000	9860	13200	8920	13000	11700	11800 J	11800	15200
ANTIMONY	31	410	0.16 UJ	0.19 UJ	0.15 UJ	0.25 UJ	0.23 UJ	0.21 UJ	0.27 UJ	0.18 UJ
ARSENIC	0.39	1.6	8.4 J	10.2 J	6.7 J	13.7 J	8.2 J	6.7 J	15.4	13.3 J
BARIUM	15000	190000	33	42.6	24.1	43.6	40.1	30.1	37.4	56.7
BERYLLIUM	160	2000	0.47	0.41	0.14 J	0.21 J	0.21 J	0.3	0.096 J	0.48 J
CADMIUM	70	800	0.29	0.4	0.048 J	0.26 J	0.027 J	0.12 J	0.058 J	0.013 U
CALCIUM			608 J	606 J	5.6 UJ	459 J	294 J	171 J	393 J	168 J
CHROMIUM	0.29	5.6	12.1 J	13.7 J	9.3	14.8	13.7	11	12	20.8
COBALT	23	300	15.1 J	16.1 J	10.2	14.4	13.4	4.9 J	8.4	13.1
COPPER	3100	41000	19.2 J	21.4 J	15	25.2	20.3	8.6	14.5	8
IRON	55000	720000	37800	37900	22800	33600	34400	21100	20600	33300
LEAD	400	800	25.8 J	24.5 J	24.8 J	63.5 J	21.8 J	26.2 J	33.4 J	19.3 J
MAGNESIUM			1720	2660	2040	2810	2620	1830	2120	3040
MANGANESE	1800	23000	558 J	293 J	439	583	501	144	255	209
MERCURY	5.6	34	0.07	0.084	0.039 J	0.14	0.041 J	0.07	0.1	0.086
NICKEL	1500	20000	27.3	32.3	13.5 J	24.4 J	27.3 J	13.6 J	18.5 J	36.7 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
LOCATION ID										
SAMPLE DATE			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
POTASSIUM			325 J	418 J	433 J	454 J	440 J	240	293 J	364 J
SELENIUM	390	5100	1.1 J	1.4 J	0.82 J	1.1 U	0.98 U	1.8	1.2 U	0.77 U
SILVER	390	5100	0.072 U	0.082 U	0.067 U	0.11 U	0.1 U	0.093 UJ	0.12 U	0.078 U
SODIUM			49.1	61.6	46.6 J	137 J	68 J	43 J	45.5 J	77.2 J
THALLIUM			0.22 U	0.25 U	0.21 U	0.33 U	0.3 U	0.28 U	0.36 U	0.24 U
VANADIUM	390	5200	20.4	23.6	19.4	28.7	23.7	26.2	21.3	37.6
ZINC	23000	310000	90.5	98.7	41 J	99.6 J	78.2 J	36.7 J	64.7 J	58.9 J
MISCELLANEOUS PARAMETERS (S.U.)										
PH			NA							
MISCELLANEOUS PARAMETERS (MG/KG)										
TOTAL ORGANIC CARBON			NA							
DIOXINS/FURANS (NG/KG)										
1,2,3,4,6,7,8,9-OCDD	15000	60000	3600 J	3920 J	3870 J	3190 J	5880 J	3840 J	4250 J	5270 J
1,2,3,4,6,7,8,9-OCDF	15000	60000	3.47 J	1.75 J	2.72 J	16.1	3.63 J	2.09 J	14.1	3.19 J
1,2,3,4,6,7,8-HPCDD	450	1800	41	38.5	27	65.1	45.4	39.9	79.7	64.3
1,2,3,4,6,7,8-HPCDF	450	1800	1.23 J	1.77 J	1.25 J	7.2	2.72 J	1.23 J	6.55	1.79 J
1,2,3,4,7,8,9-HPCDF	450	1800	0.103 J	0.0875 U	0.0992 J	0.689 J	0.0687 U	0.182 J	0.419 J	0.151 J
1,2,3,4,7,8-HXCDD	45	180	0.395 J	0.364 J	0.129 J	0.89 J	0.34 J	0.358 J	1.15 J	0.602 J
1,2,3,4,7,8-HXCDF	45	180	0.283 J	0.386 J	0.266 J	1.09 J	0.327 J	0.432 J	0.759 J	0.554 J
1,2,3,6,7,8-HXCDD	45	180	0.569 J	0.59 J	0.305 J	1.8 J	0.721 J	0.577 J	2.24 J	1.02 J
1,2,3,6,7,8-HXCDF	45	180	0.15 J	0.23 J	0.151 J	0.727 J	0.19 J	0.198 J	0.565 J	0.28 J
1,2,3,7,8,9-HXCDD	45	180	0.592 J	0.844 J	0.247 J	2.09 J	0.817 J	0.644 J	2.34 J	1.36 J
1,2,3,7,8,9-HXCDF	45	180	0.0375 U	0.122 U	0.0640 U	0.170 U	0.0303 U	0.0810 U	0.183 U	0.155 U
1,2,3,7,8-PECDD	4.5	18	0.22 J	0.0822 U	0.0960 U	0.537 J	0.167 J	0.136 J	0.562 J	0.251 J
1,2,3,7,8-PECDF	150	600	0.163 J	0.0894 U	0.103 U	0.391 J	0.0553 U	0.0385 U	0.191 J	0.134 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-921-0001	TF4-SB-922-0001	TF4-SB-923-0001	TF4-SB-924-0001	TF4-SB-925-0001	TF4-SB-926-0001	TF4-SB-927-0001
			TF4-SB920	TF4-SB921	TF4-SB922	TF4-SB923	TF4-SB924	TF4-SB925	TF4-SB926	TF4-SB927
LOCATION ID			04/22/10	04/22/10	04/19/10	04/19/10	04/20/10	04/23/10	04/19/10	04/19/10
SAMPLE DATE			0 FT							
TOP DEPTH			1 FT							
BOTTOM DEPTH			NORMAL							
SACODE			NM							
QC TYPE										
2,3,4,6,7,8-HXCDF	45	180	0.169 J	0.221 J	0.142 J	0.832 J	0.168 J	0.157 J	0.845 J	0.431 J
2,3,4,7,8-PECDF	15	60	0.142 J	0.205 J	0.102 U	0.435 J	0.0546 U	0.0799 J	0.396 J	0.261 J
2,3,7,8-TCDD	4.5	18	0.0547 U	0.0939 U	0.0863 U	0.128 U	0.0621 U	0.0635 U	0.0543 U	0.0569 U
2,3,7,8-TCDF	45	180	0.258 J	0.158 U	0.140 U	0.617 J	0.331 J	0.377 J	0.676 J	0.561 J
TEQ BIRD	4.5	18	1.2 J	0.846 J	0.518 J	2.63 J	1.33 J	1.2 J	2.76 J	2 J
TEQ BIRD HALFND	4.5	18	1.23 J	1.02 J	0.738 J	2.7 J	1.4 J	1.24 J	2.8 J	2.04 J
TEQ FISH	4.5	18	0.996 J	0.831 J	0.554 J	2.02 J	1.1 J	0.903 J	2.22 J	1.48 J
TEQ FISH HALFND	4.5	18	1.03 J	0.932 J	0.68 J	2.09 J	1.15 J	0.94 J	2.25 J	1.51 J
TEQ MAMMAL	4.5	18	2.01 J	1.9 J	1.57 J	3.18 J	2.7 J	2 J	3.69 J	3.06 J
TEQ MAMMAL HALFND	4.5	18	2.04 J	2.01 J	1.69 J	3.25 J	2.74 J	2.04 J	3.73 J	3.09 J
TOTAL HPCDD			128	38.5	56.7	133	112	105	177	150
TOTAL HPCDF			2.62 J	1.54 J	2.9	18.6	5.09	2.43 J	15.7	3.57
TOTAL HXCDD			9.49	4.39	1.87 J	16.6	11	8.21	22.3	15
TOTAL HXCDF			1.95 J	3.55 J	2.52 J	16.2	3.29 J	1.7 J	14.8	4.19
TOTAL PECDD			0.142 J	0.0822 U	0.960 U	2.31 J	1.73 J	0.799 J	2.92 J	0.493 J
TOTAL PECDF			1.71 J	3.06 J	1.91 J	17.5		2.45 J	19.9	7.71
TOTAL TCDD			0.161 J	0.0939 U	0.0863 U	0.774 J	0.139 J	0.233 J	0.446 J	0.33 J
TOTAL TCDF			0.98 J	2.57	0.224 J	7.92	0.742 J	2.73	11.9	6.57
PETROLEUM HYDROCARBONS (MG/KG)										
EXTRACTABLE PETROLEUM HYDROCARBONS			49 J	540	15 U	18 U	140	39 J	41	240

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
LOCATION ID			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
VOLATILES (UG/KG)										
1,1,1-TRICHLOROETHANE	8700000	38000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,1,2,2-TETRACHLOROETHANE	560	2800	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,1,2-TRICHLOROETHANE	1100	5300	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,1-DICHLOROETHANE	3300	17000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,1-DICHLOROETHENE	240000	1100000	5 UJ	5.3 U	4.9 UJ	4.3 UJ	8.3 U	3.5 U	3.8 U	5.4 U
1,2,3-TRICHLOROBENZENE	49000	490000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,2,4-TRICHLOROBENZENE	22000	99000	5 UJ	5.3 UJ	4.9 UJ	4.3 UJ	8.3 UJ	3.5 UJ	3.8 UJ	5.4 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	5 UJ	5.3 U	4.9 UJ	4.3 UJ	8.3 U	3.5 U	3.8 U	5.4 U
1,2-DIBROMOETHANE	34	170	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,2-DICHLOROBENZENE	1900000	9800000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,2-DICHLOROETHANE	430	2200	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,2-DICHLOROPROPANE	890	4500	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,3-DICHLOROBENZENE			5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
1,4-DICHLOROBENZENE	2400	12000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
2-BUTANONE	28000000	200000000	5 U	5.3 U	4.9 U	4.3 U	13 J	3.5 U	3.8 U	5.4 U
2-HEXANONE	210000	1400000	5 UJ	5.3 UJ	4.9 UJ	4.3 UJ	8.3 UJ	3.5 UJ	3.8 UJ	5.4 UJ
4-METHYL-2-PENTANONE	5300000	53000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
ACETONE	61000000	630000000	8.4 J	160 J	5.9 J	4 J	67 J	3.5 UJ	18 J	7.7 J
BENZENE	1100	5400	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
BROMOCHLOROMETHANE			5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
BROMODICHLOROMETHANE	270	1400	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

**TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
LOCATION ID										
SAMPLE DATE			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
BROMOFORM	61000	220000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
BROMOMETHANE	7300	32000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
BTEX			2 J	5.3 U	4.9 U	4.3 U	2.6 J	1.3 J	0.87 J	5.4 U
CARBON DISULFIDE	820000	3700000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
CARBON TETRACHLORIDE	610	3000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
CHLOROBENZENE	290000	1400000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
CHLORODIBROMOMETHANE	680	3300	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
CHLOROETHANE	15000000	61000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
CHLOROFORM	290	1500	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
CHLOROMETHANE	120000	500000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
CIS-1,2-DICHLOROETHENE	780000	10000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
CIS-1,3-DICHLOROPROPENE	1700	8100	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
CYCLOHEXANE	7000000	29000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
DICHLORODIFLUOROMETHANE	180000	780000	5 UJ	5.3 U	4.9 UJ	4.3 UJ	8.3 UJ	3.5 U	3.8 U	5.4 U
ETHYLBENZENE	5400	27000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
ISOPROPYLBENZENE	2100000	11000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
M+P-XYLENES			2 J	5.3 U	4.9 U	4.3 U	8.3 U	1.3 J	3.8 U	5.4 U
METHYL ACETATE	78000000	1E+09	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
METHYL CYCLOHEXANE			5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
METHYL TERT-BUTYL ETHER	43000	220000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
METHYLENE CHLORIDE	11000	53000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
O-XYLENE	3800000	19000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
STYRENE	6300000	36000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
LOCATION ID										
SAMPLE DATE			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
TETRACHLOROETHENE	550	2600	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
TOLUENE	5000000	45000000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
TOTAL CHLORINATED ETHENES			5 UJ	5.3 U	4.9 UJ	4.3 UJ	8.3 U	3.5 U	3.8 U	5.4 U
TOTAL CHLORINATED VOCS			5 UJ	5.3 UJ	4.9 UJ	4.3 UJ	8.3 UJ	3.5 UJ	3.8 UJ	5.4 UJ
TOTAL XYLENES	630000	2700000	2 J	5.3 U	4.9 U	4.3 U	2.6 J	1.3 J	0.87 J	5.4 U
TRANS-1,2-DICHLOROETHENE	150000	690000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
TRICHLOROETHENE	2800	14000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
TRICHLOROFLUOROMETHANE	790000	3400000	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
VINYL CHLORIDE	60	1700	5 U	5.3 U	4.9 U	4.3 U	8.3 U	3.5 U	3.8 U	5.4 U
SEMIVOLATILES (UG/KG)										
1,1-BIPHENYL	3900000	51000000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 UJ
1,2,4,5-TETRACHLOROENZENE	18000	180000	3.3 UJ	4.5 U	4.3 U	4.3 UJ	6 U	3.9 U	4.2 U	23 U
1,4-DIOXANE	44000	160000	3.3 U	4.5 U	4.3 U	4.3 U	6 U	3.9 U	4.2 U	23 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	450 U	430 U	430 U	600 U	390 U	420 U	2300 UJ
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	4.5 U	4.3 UJ	4.3 U	6 U	3.9 UJ	4.2 UJ	23 U
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	920 U	880 U	880 U	1200 U	790 U	850 U	4700 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	4.5 U	4.3 UJ	4.3 U	6 U	3.9 UJ	4.2 UJ	23 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
LOCATION ID			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
SAMPLE DATE			0 FT							
TOP DEPTH			1 FT							
BOTTOM DEPTH			NORMAL							
SACODE			NM							
QC TYPE										
2,4-DIMETHYLPHENOL	1200000	12000000	330 UJ	450 UJ	4.3 UJ	4.3 UJ	6 UJ	3.9 UJ	4.2 UJ	39 J
2,4-DINITROPHENOL	120000	1200000	670 UJ	920 UJ	880 UJ	880 UJ	1200 UJ	790 UJ	850 UJ	4700 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
2,6-DINITROTOLUENE	61000	620000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
2-CHLOROPHENOL	390000	5100000	5.4	4.5 U	4.3 U	4.3 U	6 U	3.9 U	4.2 U	23 U
2-METHYLNAPHTHALENE	310000	4100000	5.4 J	4.7 J	4.3 U	4.3 UJ	16 J	3.9 U	4.2 U	47
2-METHYLPHENOL	3100000	31000000	3.3 UJ	450 U	4.3 U	4.3 UJ	6 U	3.9 U	4.2 U	30
2-NITROANILINE	610000	6000000	670 U	920 U	880 U	880 U	1200 U	790 U	850 U	4700 U
2-NITROPHENOL			330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
3,3'-DICHLOROBENZIDINE	1100	3800	330 U	450 U	430 UJ	430 UJ	600 U	390 U	420 U	2300 U
3-NITROANILINE			670 U	920 U	880 U	880 U	1200 U	790 U	850 U	4700 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	920 UJ	880 U	880 U	1200 UJ	790 UJ	850 UJ	4700 UJ
4-BROMOPHENYL PHENYL ETHER			330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	4.5 U	4.3 UJ	4.3 U	6 U	3.9 UJ	4.2 UJ	23 U
4-CHLOROANILINE	2400	8600	330 UJ	450 UJ	430 UJ	430 UJ	600 UJ	390 UJ	420 UJ	2300 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	4.5 UJ	4.3 U	4.3 U	6 U	3.9 U	4.2 U	81
4-NITROANILINE	24000	86000	670 U	920 U	880 U	880 U	1200 U	790 U	850 U	4700 U
4-NITROPHENOL			670 UJ	920 UJ	880 U	880 U	1200 UJ	790 UJ	850 UJ	4700 U
ACENAPHTHENE	3400000	33000000	6.2	4.5 U	4.3 U	4.3 U	7.6	3.9 U	4.2 U	100
ACENAPHTHYLENE	3400000	33000000	24	31	9.1	4.3 U	38	3.9 U	4.2 U	2500
ACETOPHENONE	7800000	100000000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
LOCATION ID										
SAMPLE DATE			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
ANTHRACENE	17000000	170000000	48	69	12	4.3 U	36	3.9 U	4.2 U	8800
ATRAZINE	2100	7500	3.3 U	4.5 U	4.3 U	4.3 U	6 U	3.9 U	4.2 U	23 U
BENZALDEHYDE	7800000	100000000	330 UJ	450 UJ	430 UJ	430 UJ	600 UJ	390 UJ	420 UJ	2300 UJ
BENZO(A)ANTHRACENE	150	2100	160	160	28	13	180	3.9 U	4.2 U	54000
BENZO(A)PYRENE	15	210	130	130	31 J	13 J	230 J	3.9 U	4.2 U	24000
BENZO(B)FLUORANTHENE	150	2100	210	230 J	79 J	19 J	320 J	4.3 J	4.2 U	49000
BENZO(G,H,I)PERYLENE	1700000	17000000	72	86	17	11	190	3.9 U	4.2 U	8500
BENZO(K)FLUORANTHENE	1500	21000	210	170 J	48	18	260	3.9 U	4.2 U	19000
BIS(2-CHLOROETHOXY)METHAN E	180000	1800000	330 UJ	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	450 U	430 U	430 U	320 J	390 U	420 U	2300 U
BUTYL BENZYL PHTHALATE	260000	910000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
CAPROLACTAM	31000000	310000000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
CARBAZOLE			330 U	450 U	430 U	430 U	600 U	390 U	420 U	740 J
CHRYSENE	15000	210000	160	180	57	16	270	3.9 U	4.2 U	59000
DIBENZO(A,H)ANTHRACEN E	15	210	34	24 J		4.3 U	48 J	3.9 UJ	4.2 UJ	3900 J
DIBENZOFURAN	78000	1000000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
DIETHYL PHTHALATE	49000000	490000000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
DIMETHYL PHTHALATE			330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
DI-N-OCTYL PHTHALATE			330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
FLUORANTHENE	2300000	22000000	160	290	52	26	470	5.1	4.2 U	83000

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
LOCATION ID			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
SAMPLE DATE			0 FT							
TOP DEPTH			1 FT							
BOTTOM DEPTH			NORMAL							
SACODE			NM							
QC TYPE										
FLUORENE	2300000	22000000	11	12	4.3 U	4.3 U	15	3.9 U	4.2 U	470
HEXACHLOROBENZENE	300	1100	3.3 U	4.5 U	4.3 U	4.3 U	6 U	3.9 U	4.2 U	23 U
HEXACHLOROBUTADIENE	6200	22000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	450 UJ	430 UJ	430 UJ	600 UJ	390 UJ	420 UJ	2300 UJ
HEXACHLOROETHANE	35000	120000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
HIGH MOLECULAR WEIGHT PAHS			1360	1580 J	383 J	148 J	2500 J	13.8 J	4.2 UJ	395000 J
INDENO(1,2,3-CD)PYRENE	150	2100	72	75 J	18 J	10 J	180 J	3.9 UJ	4.2 UJ	8500
ISOPHORONE	510000	1800000	330 UJ	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
LOW MOLECULAR WEIGHT PAHS			195 J	222 J	35.1	12 J	294 J	3.9 U	4.2 U	12400
NAPHTHALENE	3600	18000	6.2	5	4.3 U	4.3 UJ	21	3.9 U	4.2 U	23 U
NITROBENZENE	4800	24000	330 UJ	450 U	430 U	430 U	600 U	390 U	420 U	2300 UJ
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U
PENTACHLOROPHENOL	3000	9000	670 UJ	45 UJ	43 U	43 U	60 U	39 U	42 U	230 U
PHENANTHRENE	1700000	17000000	94	100	14	12	160	3.9 U	4.2 U	440
PHENOL	18000000	180000000	31	4.5 U	4.3 U	4.3 U	6 U	3.9 U	4.2 U	68
PYRENE	1700000	17000000	150	240	47	22	350	4.4	4.2 U	86000
TOTAL CARCINOGENIC PAHS-HALFND	15	210	976	969 J	267 J	91.2 J	1490 J	16 J	4.2 UJ	217000 J
TOTAL CARCINOGENIC PAHS-POS	15	210	976	969 J	267 J	89 J	1490 J	4.3 J	4.2 UJ	217000 J
TOTAL CHLORINATED VOCS			330 U	450 U	430 U	430 U	600 U	390 U	420 U	2300 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
LOCATION ID										
SAMPLE DATE			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
TOTAL PAHS			1550 J	1810 J	418 J	160 J	2790 J	13.8 J	4.2 UJ	407000 J
PESTICIDES/PCBS (UG/KG)										
4,4'-DDD	2000	7200	3.3 U	35	4.3 U	4.3 U	6 U	3.9 U	4.1 U	49
4,4'-DDE	1400	5100	3.3 U	4.6 U	4.3 U	4.3 U	6 U	3.9 U	4.1 U	4.5 U
4,4'-DDT	1700	7000	3.3 U	4.6 UJ	4.3 U	4.3 U	6 U	3.9 U	4.1 U	10 J
ALDRIN	29	100	1.7 U	2.4 U	2.2 U	2.2 U	3.1 U	2 U	2.1 U	2.3 U
ALPHA-BHC	77	270	1.7 U	2.4 U	2.2 U	2.2 U	3.1 U	2 U	2.1 U	2.3 UJ
ALPHA-CHLORDANE	1600	6500	1.7 U	2.4 U	2.2 U	2.2 U	3.1 U	2 U	2.1 U	340 UJ
AROCLOR-1016	3900	21000	33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
AROCLOR-1221	140	540	33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
AROCLOR-1232	140	540	33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
AROCLOR-1242	220	740	33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
AROCLOR-1248	220	740	33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
AROCLOR-1254	220	740	33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
AROCLOR-1260	220	740	33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
AROCLOR-1262			33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
AROCLOR-1268			33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
BETA-BHC	270	960	1.7 U	2.4 U	2.2 U	2.2 U	14	2 U	2.1 U	2.3 UJ
DELTA-BHC	77	270	1.7 U	2.4 U	2.2 U	2.2 U	3.1 U	2 U	2.1 U	2.3 U
DIELDRIN	30	110	3.3 U	4.6 U	4.3 U	4.3 U	6 U	3.9 U	4.1 U	80 UJ
ENDOSULFAN I	370000	3700000	1.7 U	2.4 U	2.2 U	2.2 U	3.1 U	2 U	2.1 U	2.3 U
ENDOSULFAN II	370000	3700000	3.3 U	4.6 U	4.3 U	4.3 U	6 U	3.9 U	4.1 U	41 UJ
ENDOSULFAN SULFATE	370000	3700000	3.3 U	4.6 U	4.3 U	4.3 U	6 U	3.9 U	4.1 U	22 J
ENDRIN	18000	180000	3.3 U	4.6 U	4.3 U	4.3 U	6 U	3.9 U	4.1 U	7.9 J
ENDRIN ALDEHYDE	18000	180000	3.3 U	4.6 U	4.3 U	4.3 U	6 U	3.9 U	4.1 U	35 J
ENDRIN KETONE	18000	180000	3.3 U	4.6 U	4.3 U	4.3 U	6 U	3.9 U	4.1 U	69

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
LOCATION ID										
SAMPLE DATE			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
GAMMA-BHC (LINDANE)	520	2100	1.7 U	2.4 U	2.2 U	2.2 U	3.4 J	2 U	2.1 U	2.3 UJ
GAMMA-CHLORDANE	1600	6500	1.7 U	2.4 U	2.2 U	2.2 U	3.1 U	2 U	2.1 U	2.3 UJ
HEPTACHLOR	110	380	1.7 U	2.4 U	2.2 U	2.2 U	3.1 U	2 U	2.1 U	2.3 U
HEPTACHLOR EPOXIDE	53	190	1.7 U	2.4 U	2.2 U	2.2 U	3.1 U	2 U	2.1 U	2.3 U
METHOXYCHLOR	310000	3100000	17 U	24 UJ	22 U	22 U	31 U	20 U	21 U	320 UJ
TOTAL AROCLOR	220	740	33 U	46 U	43 U	43 U	60 U	39 U	41 U	45 U
TOTAL CHLORDANE			1.7 U	2.4 U	2.2 U	2.2 U	3.1 U	2 U	2.1 U	171 UJ
TOTAL DDD/DDE/DDT			3.3 U	35 J	4.3 U	4.3 U	6 U	3.9 U	4.1 U	59 J
TOXAPHENE	440	1600	170 U	240 J	220 U	220 U	310 U	200 U	210 U	230 U
METALS (MG/KG)										
ALUMINUM	77000	990000	9860	8870	8940 J	9740 J	10400	10000	10800	7570
ANTIMONY	31	410	0.16 UJ	0.16 UJ	0.12 UJ	0.16 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.15 UJ
ARSENIC	0.39	1.6	8.4 J	9.2 J	8.5 J	8.6 J	14.6 J	4.2 J	11.3 J	9.3 J
BARIUM	15000	190000	33	27.1	24.1 J	24.3	31.1	26.1	21.9 J	22.8
BERYLLIUM	160	2000	0.47	0.67 J	0.37	0.3	0.38	0.12 J	0.27 J	0.61 J
CADMIUM	70	800	0.29	0.23 J	0.27	0.17 J	0.48	0.013 U	0.013 U	0.15 J
CALCIUM			608 J	845 J	286 J	101 J	454 J	6.5 UJ	6.6 UJ	380 J
CHROMIUM	0.29	5.6	12.1 J	13.8	11.9	10	16.3 J	9.4	14.9	10.8
COBALT	23	300	15.1 J	13.7 J	9.4	6.8	12.3 J	5.2	8.2 J	12 J
COPPER	3100	41000	19.2 J	18.1 J	18.6	11.3	22.4 J	5.4	7.5	14.9 J
IRON	55000	720000	37800	35100	28900	24400	34000	18100	34100	41000
LEAD	400	800	25.8 J	24.4	19 J	20.1 J	31.4 J	10.3 J	9.4 J	19.1
MAGNESIUM			1720	1790 J	1550	1470	2860	1470	1700	1110 J
MANGANESE	1800	23000	558 J	368	354	237	249 J	149	238	453
MERCURY	5.6	34	0.07	0.034 UJ	0.05	0.066	0.098	0.036 J	0.031 J	0.075 U
NICKEL	1500	20000	27.3	27.9	21.2 J	14.6 J	30	13.9 J	15.6 J	17.7

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
LOCATION ID										
SAMPLE DATE			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
POTASSIUM			325 J	235 J	230	233	244 J	187 J	207 J	331 J
SELENIUM	390	5100	1.1 J	4.4 UJ	0.97 J	1.1 J	1 J	0.77 U	0.92 J	4.4 UJ
SILVER	390	5100	0.072 U	0.093 UJ	0.054 UJ	0.071 UJ	0.086 U	0.078 U	0.079 U	0.11 UJ
SODIUM			49.1	45 J	50.2	23.5 J	41.5 J	23.9 J	49.6 J	23.9 UJ
THALLIUM			0.22 U	2.6	0.16 U	0.21 U	0.26 U	0.24 U	0.24 U	3.2
VANADIUM	390	5200	20.4	21.8	21.6	21.4	22.2	17.4	26.3	17.9
ZINC	23000	310000	90.5	115	69.6 J	37.1 J	106	30.2 J	50.2 J	57.2
MISCELLANEOUS PARAMETERS (S.U.)										
PH			NA	5.1						
MISCELLANEOUS PARAMETERS (MG/KG)										
TOTAL ORGANIC CARBON			NA	5000 U						
DIOXINS/FURANS (NG/KG)										
1,2,3,4,6,7,8,9-OCDD	15000	60000	3600 J	5710 J	2890 J	8550 J	1890 J	9440 J	21100 J	4520 J
1,2,3,4,6,7,8,9-OCDF	15000	60000	3.47 J	4.91 J	1.88 J	4.13 J	26.6	0.519 J	0.0641 U	3.48 U
1,2,3,4,6,7,8-HPCDD	450	1800	41	53.5	29.2	79.3	55.2	46.6	78	37.2
1,2,3,4,6,7,8-HPCDF	450	1800	1.23 J	2.38 U	1.3 J	2.36 J	7.87	0.271 J	0.14 J	1.42 U
1,2,3,4,7,8,9-HPCDF	450	1800	0.103 J	0.249 J	0.0454 U	0.167 J	0.491 J	0.0327 U	0.0605 U	0.456 U
1,2,3,4,7,8-HXCDD	45	180	0.395 J	0.597 J	0.274 J	0.765 J	0.806 J	0.126 J	0.17 J	0.326 U
1,2,3,4,7,8-HXCDF	45	180	0.283 J	0.671 J	0.508 J	0.688 J	0.499 J	0.115 J	0.0380 U	0.257 U
1,2,3,6,7,8-HXCDD	45	180	0.569 J	0.864 J	0.506 J	1.19 J	1.81 J	0.226 J	0.23 J	0.596 J
1,2,3,6,7,8-HXCDF	45	180	0.15 J	0.333 J	0.251 J	0.318 J	0.457 J	0.0719 J	0.0361 U	0.244 U
1,2,3,7,8,9-HXCDD	45	180	0.592 J	1.07 J	0.485 J	1.45 J	1.85 J	0.208 J	0.328 J	0.814 J
1,2,3,7,8,9-HXCDF	45	180	0.0375 U	0.0665 U	0.0547 U	0.0240 U	0.265 U	0.0462 U	0.0471 U	0.327 U
1,2,3,7,8-PECDD	4.5	18	0.22 J	0.336 J	0.0934 U	0.324 J	0.329 J	0.0403 U	0.0443 U	0.486 U
1,2,3,7,8-PECDF	150	600	0.163 J	0.213 J	0.162 J	0.256 J	0.105 J	0.0398 U	0.0344 U	0.377 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-928-0001	TF4-SB-929-0001	TF4-SB-930-0001	TF4-SB-931-0001	TF4-SB-932-0001	TF4-SB-933-0001	TF4-SB-934-0001
			TF4-SB920	TF4-SB928	TF4-SB929	TF4-SB930	TF4-SB931	TF4-SB932	TF4-SB933	TF4-SB934
LOCATION ID										
SAMPLE DATE			04/22/10	04/15/10	04/23/10	04/23/10	04/20/10	04/20/10	04/20/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
2,3,4,6,7,8-HXCDF	45	180	0.169 J	0.303 J	0.243 J	0.44 J	0.464 J	0.0736 J	0.0404 U	0.279 U
2,3,4,7,8-PECDF	15	60	0.142 J	0.28 J	0.187 J	0.274 J	0.0723 U	0.0393 U	0.0339 U	0.374 U
2,3,7,8-TCDD	4.5	18	0.0547 U	0.0517 U	0.0551 U	0.0452 U	0.0880 U	0.0329 U	0.0579 U	1.25 U
2,3,7,8-TCDF	45	180	0.258 J	0.606 J	0.376 J	0.446 J	0.243 J	0.0651 U	0.0572 U	0.988 U
TEQ BIRD	4.5	18	1.2 J	2.15 J	1.08 J	2.37 J	1.3 J	1.05 J	2.23 J	0.577 J
TEQ BIRD HALFND	4.5	18	1.23 J	2.19 J	1.16 J	2.39 J	1.39 J	1.14 J	2.34 J	2.22 J
TEQ FISH	4.5	18	0.996 J	1.59 J	0.699 J	2.01 J	1.26 J	1.09 J	2.28 J	0.503 J
TEQ FISH HALFND	4.5	18	1.03 J	1.63 J	0.776 J	2.03 J	1.33 J	1.14 J	2.35 J	1.65 J
TEQ MAMMAL	4.5	18	2.01 J	3.12 J	1.5 J	4.33 J	2.16 J	3.38 J	7.18 J	1.87 J
TEQ MAMMAL HALFND	4.5	18	2.04 J	3.16 J	1.58 J	4.35 J	2.22 J	3.43 J	7.25 J	2.93 J
TOTAL HPCDD			128	134	68.1	201	101	185	172	94
TOTAL HPCDF			2.62 J	5.29	2.22 J	4.27	21.3	0.271 J	0.14 J	1.42 U
TOTAL HXCDD			9.49	11.7 U	5.56	18.2	12.7	3.18	1.56 J	6.27 U
TOTAL HXCDF			1.95 J	4.42	2.08 J	4.13	10.5	0.908 J	0.0361 U	0.953 J
TOTAL PECDD			0.142 J	2.04 J	0.934 J	2.85 J	0.591 J	0.1 J	0.0443 U	0.486 U
TOTAL PECDF			1.71 J	5.3	3.21 J	2.33 J	5.78	1.89 J	0.0531 J	0.374 U
TOTAL TCDD			0.161 J	0.676 J	0.388 J	0.654 J	0.0880 U	0.0329 U	0.0579 U	1.25 U
TOTAL TCDF			0.98 J	6.58 J	2.59	2.59	0.825 J	0.696 J	0.0572 U	0.988 U
PETROLEUM HYDROCARBONS (MG/KG)										
EXTRACTABLE PETROLEUM HYDROCARBONS			49 J	280	43 J	47 J	140	14 U	15 U	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
LOCATION ID			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
SAMPLE DATE			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
VOLATILES (UG/KG)										
1,1,1-TRICHLOROETHANE	8700000	38000000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,1,2,2-TETRACHLOROETHANE	560	2800	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,1,2-TRICHLOROETHANE	1100	5300	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	5 U	3.6 UJ	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,1-DICHLOROETHANE	3300	17000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,1-DICHLOROETHENE	240000	1100000	5 UJ	3.6 U	5.5 U	5.9 UJ	4.3 U	4.7 U	4.6 U	5.4 U
1,2,3-TRICHLOROBENZENE	49000	490000	5 U	3.6 UJ	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,2,4-TRICHLOROBENZENE	22000	99000	5 UJ	3.6 UJ	5.5 UJ	5.9 UJ	4.3 UJ	4.7 UJ	4.6 UJ	5.4 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	5 UJ	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,2-DIBROMOETHANE	34	170	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,2-DICHLOROBENZENE	1900000	9800000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,2-DICHLOROETHANE	430	2200	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,2-DICHLOROPROPANE	890	4500	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,3-DICHLOROBENZENE			5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
1,4-DICHLOROBENZENE	2400	12000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
2-BUTANONE	28000000	200000000	5 U	3.6 U	5.5 U	22 J	4.3 U	4.7 U	4.6 U	5.4 U
2-HEXANONE	210000	1400000	5 UJ	3.6 U	5.5 UJ	5.9 UJ	4.3 UJ	4.7 UJ	4.6 UJ	5.4 UJ
4-METHYL-2-PENTANONE	5300000	53000000	5 U	3.6 UJ	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
ACETONE	61000000	630000000	8.4 J	3.6 UJ	5.5 UJ	65 J	3.5 J	4.7 UJ	4.6 UJ	5.4 UJ
BENZENE	1100	5400	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
BROMOCHLOROMETHANE			5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
BROMODICHLOROMETHANE	270	1400	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
LOCATION ID										
SAMPLE DATE			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
BROMOFORM	61000	220000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
BROMOMETHANE	7300	32000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
BTEX			2 J	3.6 U	5.5 U	5.9 U	1.8 J	2.5 J	4.6 U	5.4 U
CARBON DISULFIDE	820000	3700000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
CARBON TETRACHLORIDE	610	3000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
CHLOROBENZENE	290000	1400000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
CHLORODIBROMOMETHANE	680	3300	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
CHLOROETHANE	15000000	61000000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
CHLOROFORM	290	1500	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
CHLOROMETHANE	120000	500000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
CIS-1,2-DICHLOROETHENE	780000	10000000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
CIS-1,3-DICHLOROPROPENE	1700	8100	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
CYCLOHEXANE	7000000	29000000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
DICHLORODIFLUOROMETHANE	180000	780000	5 UJ	3.6 U	5.5 U	5.9 UJ	4.3 U	4.7 U	4.6 U	5.4 U
ETHYLBENZENE	5400	27000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
ISOPROPYLBENZENE	2100000	11000000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
M+P-XYLENES			2 J	3.6 U	5.5 U	5.9 U	1.8 J	2.5 J	4.6 U	5.4 U
METHYL ACETATE	78000000	1E+09	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
METHYL CYCLOHEXANE			5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
METHYL TERT-BUTYL ETHER	43000	220000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
METHYLENE CHLORIDE	11000	53000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
O-XYLENE	3800000	19000000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
STYRENE	6300000	36000000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
LOCATION ID										
SAMPLE DATE			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
TETRACHLOROETHENE	550	2600	5 U	3.6 U	5.5 U	5.9 UJ	4.3 U	4.7 U	4.6 U	5.4 U
TOLUENE	5000000	45000000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
TOTAL CHLORINATED ETHENES			5 UJ	3.6 U	5.5 U	5.9 UJ	4.3 U	4.7 U	4.6 U	5.4 U
TOTAL CHLORINATED VOCS			5 UJ	3.6 UJ	5.5 UJ	5.9 UJ	4.3 UJ	4.7 UJ	4.6 UJ	5.4 UJ
TOTAL XYLENES	630000	2700000	2 J	3.6 U	5.5 U	5.9 U	1.8 J	2.5 J	4.6 U	5.4 U
TRANS-1,2-DICHLOROETHENE	150000	690000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
TRICHLOROETHENE	2800	14000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
TRICHLOROFLUOROMETHANE	790000	3400000	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
VINYL CHLORIDE	60	1700	5 U	3.6 U	5.5 U	5.9 U	4.3 U	4.7 U	4.6 U	5.4 U
SEMIVOLATILES (UG/KG)										
1,1-BIPHENYL	3900000	51000000	330 U	370 U	410 UJ	640 U	330 U	330 U	330 U	440 U
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 UJ	3.7 UJ	4.1 U	6.4 U	3.3 UJ	3.3 UJ	3.3 UJ	4.4 U
1,4-DIOXANE	44000	160000	3.3 U	3.7 U	4.1 U	6.4 U	3.3 U	3.3 U	3.3 U	4.4 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	370 U	410 UJ	640 U	330 UJ	330 UJ	330 UJ	440 U
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	3.7 UJ	4.1 U	6.4 UJ	3.3 U	3.3 U	3.3 U	4.4 U
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	750 U	840 U	1300 U	670 U	670 U	670 U	900 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	3.7 U	4.1 U	6.4 UJ	3.3 U	3.3 U	3.3 U	4.4 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
LOCATION ID										
SAMPLE DATE			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
2,4-DIMETHYLPHENOL	1200000	12000000	330 UJ	3.7 UJ	4.1 UJ	6.4 UJ	330 UJ	330 UJ	330 UJ	440 UJ
2,4-DINITROPHENOL	120000	1200000	670 UJ	750 UJ	840 UJ	1300 UJ	670 UJ	670 UJ	670 UJ	900 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
2,6-DINITROTOLUENE	61000	620000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
2-CHLOROPHENOL	390000	5100000	5.4	3.7 U	4.1 U	6.4 U	6.5	8	6.4	4.4 U
2-METHYLNAPHTHALENE	310000	4100000	5.4 J	3.7 U	4.1 UJ	6.4 U	3.3 UJ	3.3 UJ	3.3 UJ	4.4 UJ
2-METHYLPHENOL	3100000	31000000	3.3 UJ	3.7 UJ	4.5	6.4 U	3.3 UJ	3.3 UJ	3.3 UJ	440 U
2-NITROANILINE	610000	6000000	670 U	750 U	840 U	1300 U	670 U	670 U	670 U	900 U
2-NITROPHENOL			330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
3,3'-DICHLOROBENZIDINE	1100	3800	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
3-NITROANILINE			670 U	750 U	840 U	1300 U	670 U	670 U	670 U	900 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	750 UJ	840 U	1300 U	670 UJ	670 UJ	670 UJ	900 UJ
4-BROMOPHENYL PHENYL ETHER			330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	3.7 U	4.1 U	6.4 UJ	3.3 U	3.3 U	3.3 U	4.4 U
4-CHLOROANILINE	2400	8600	330 UJ	370 UJ	410 UJ	640 UJ	330 UJ	330 UJ	330 UJ	440 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	3.7 UJ	5	56	3.3 UJ	3.3 UJ	3.3 UJ	4.4 UJ
4-NITROANILINE	24000	86000	670 U	750 U	840 U	1300 U	670 U	670 U	670 U	900 U
4-NITROPHENOL			670 UJ	750 U	840 U	1300 U	670 UJ	670 UJ	670 UJ	900 UJ
ACENAPHTHENE	3400000	33000000	6.2	3.7 U	4.1 U	6.4 U	3.3 U	3.3 U	3.3 U	4.4 U
ACENAPHTHYLENE	3400000	33000000	24	4	7.6	6.6	3.3 U	3.3 U	3.3 U	4.4 U
ACETOPHENONE	7800000	100000000	330 U	370 U	410 UJ	640 U	330 U	330 U	330 U	440 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
LOCATION ID										
SAMPLE DATE			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
ANTHRACENE	17000000	170000000	48	4.5	8	6.4 U	4.5	3.3 U	3.3 U	4.4 U
ATRAZINE	2100	7500	3.3 U	3.7 U	4.1 U	6.4 U	3.3 U	3.3 U	3.3 U	4.4 U
BENZALDEHYDE	7800000	100000000	330 UJ	370 UJ	410 UJ	640 UJ	330 UJ	330 UJ	330 UJ	440 UJ
BENZO(A)ANTHRACENE	150	2100	160	14	29	19	8.2	3.3 U	17	16
BENZO(A)PYRENE	15	210	130	13	31	25 J	8.5	3.3 U	15	15
BENZO(B)FLUORANTHENE	150	2100	210	24 J	53 J	41 J	14	3.3 U	23	27 J
BENZO(G,H,I)PERYLENE	1700000	17000000	72	8.2	24	22	7.5	3.3 U	10	12
BENZO(K)FLUORANTHENE	1500	21000	210	11	20 J	19	10	3.3 U	15	11 J
BIS(2-CHLOROETHOXY)METHAN E	180000	1800000	330 UJ	370 U	410 U	640 U	330 UJ	330 UJ	330 UJ	440 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	370 U	410 U	640 U	330 UJ	330 UJ	330 UJ	440 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	370 U	410 U	74 J	330 U	36 J	330 U	440 U
BUTYL BENZYL PHTHALATE	260000	910000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
CAPROLACTAM	31000000	310000000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
CARBAZOLE			330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
CHRYSENE	15000	210000	160	21	33	29	12	3.3 U	21	17
DIBENZO(A,H)ANTHRACEN E	15	210	34	3.7 U	6.4 J	6.4 U	3.3 U	3.3 U	3.8	4.4 UJ
DIBENZOFURAN	78000	1000000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
DIETHYL PHTHALATE	49000000	490000000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
DIMETHYL PHTHALATE			330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
DI-N-OCTYL PHTHALATE			330 U	370 U	410 U	640 UJ	330 U	330 U	330 U	440 U
FLUORANTHENE	2300000	22000000	160	31	57	33	14	3.3 U	31	28

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

**TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
LOCATION ID			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
SAMPLE DATE			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
FLUORENE			2300000	22000000	11	3.7 U	4.1 U	6.4 U	3.3 U	3.3 U
HEXACHLOROBENZENE	300	1100	3.3 U	3.7 U	4.1 U	6.4 U	3.3 U	3.3 U	3.3 U	4.4 U
HEXACHLOROBUTADIENE	6200	22000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	370 UJ	410 UJ	640 UJ	330 UJ	330 UJ	330 UJ	440 UJ
HEXACHLOROETHANE	35000	120000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
HIGH MOLECULAR WEIGHT PAHS			1360	157 J	322 J	240 J	93.6	3.3 U	169	160 J
INDENO(1,2,3-CD)PYRENE	150	2100	72	7.4	21 J	20 J	6.4	3.3 U	9.3	11 J
ISOPHORONE	510000	1800000	330 UJ	370 U	410 U	640 U	330 UJ	330 UJ	330 UJ	440 U
LOW MOLECULAR WEIGHT PAHS			195 J	16	43.4 J	18.6	10.1 J	3.3 UJ	12 J	12 J
NAPHTHALENE	3600	18000	6.2	3.7 U	6.8	6.4 U	3.3 U	3.3 U	3.3 U	4.4 U
NITROBENZENE	4800	24000	330 UJ	370 UJ	410 U	640 U	330 UJ	330 UJ	330 UJ	440 U
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	370 U	410 U	640 U	330 UJ	330 UJ	330 UJ	440 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U
PENTACHLOROPHENOL	3000	9000	670 UJ	37 UJ	840 UJ	64 U	670 UJ	670 UJ	670 UJ	44 UJ
PHENANTHRENE	1700000	17000000	94	7.5	21	12	5.6	3.3 U	12	12
PHENOL	18000000	180000000	31	3.7 U	7.1	65	28	23	25	4.4 U
PYRENE	1700000	17000000	150	27	48	32	13	3.3 U	24	23
TOTAL CARCINOGENIC PAHS-HALFND	15	210	976	92.2 J	193 J	156 J	60.8	3.3 U	104	99.2 J
TOTAL CARCINOGENIC PAHS-POS	15	210	976	90.4 J	193 J	153 J	59.1	3.3 U	104	97 J
TOTAL CHLORINATED VOCS			330 U	370 U	410 U	640 U	330 U	330 U	330 U	440 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
LOCATION ID			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
SAMPLE DATE			0 FT							
TOP DEPTH			1 FT							
BOTTOM DEPTH			NORMAL							
SACODE			NM							
QC TYPE										
TOTAL PAHS			1550 J	173 J	366 J	259 J	104 J	3.3 UJ	181 J	172 J
PESTICIDES/PCBS (UG/KG)										
4,4'-DDD	2000	7200	3.3 U	3.6 U	4.2 U	6.4 U	3.3 U	4.2 U	3.3 U	4.5 U
4,4'-DDE	1400	5100	3.3 U	3.6 U	4.2 U	6.4 U	3.3 U	4.2 U	3.3 U	4.5 U
4,4'-DDT	1700	7000	3.3 U	3.6 U	4.2 U	6.4 U	3.3 U	4.2 U	3.3 U	4.5 UJ
ALDRIN	29	100	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
ALPHA-BHC	77	270	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
ALPHA-CHLORDANE	1600	6500	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
AROCLOR-1016	3900	21000	33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
AROCLOR-1221	140	540	33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
AROCLOR-1232	140	540	33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
AROCLOR-1242	220	740	33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
AROCLOR-1248	220	740	33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
AROCLOR-1254	220	740	33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
AROCLOR-1260	220	740	33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
AROCLOR-1262			33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
AROCLOR-1268			33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
BETA-BHC	270	960	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
DELTA-BHC	77	270	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
DIENDRIN	30	110	3.3 U	3.6 U	4.2 U	6.4 U	3.3 U	4.2 U	3.3 U	4.5 U
ENDOSULFAN I	370000	3700000	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
ENDOSULFAN II	370000	3700000	3.3 U	3.6 U	4.2 U	6.4 U	3.3 U	4.2 U	3.3 U	4.5 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	3.6 U	4.2 U	6.4 U	3.3 U	4.2 U	3.3 U	4.5 U
ENDRIN	18000	180000	3.3 U	3.6 U	4.2 UJ	6.4 U	3.3 U	4.2 U	3.3 U	4.5 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	3.6 U	4.2 U	6.4 U	3.3 U	4.2 U	3.3 U	4.5 U
ENDRIN KETONE	18000	180000	3.3 U	3.6 U	4.2 U	6.4 U	3.3 U	4.2 U	3.3 U	4.5 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
LOCATION ID										
SAMPLE DATE			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
GAMMA-BHC (LINDANE)	520	2100	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
GAMMA-CHLORDANE	1600	6500	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
HEPTACHLOR	110	380	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
HEPTACHLOR EPOXIDE	53	190	1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
METHOXYCHLOR	310000	3100000	17 U	19 U	21 U	33 U	17 U	22 U	17 U	23 UJ
TOTAL AROCLOR	220	740	33 U	36 U	42 U	64 U	33 U	33 U	33 U	45 U
TOTAL CHLORDANE			1.7 U	1.9 U	2.1 U	3.3 U	1.7 U	2.2 U	1.7 U	2.3 U
TOTAL DDD/DDE/DDT			3.3 U	3.6 U	4.2 U	6.4 U	3.3 U	4.2 U	3.3 U	4.5 UJ
TOXAPHENE	440	1600	170 U	190 U	210 U	330 U	170 U	220 U	170 U	230 U
METALS (MG/KG)										
ALUMINUM	77000	990000	9860	5770 J	4850	8500 J	8870	9800	11200	8450
ANTIMONY	31	410	0.16 UJ	0.12 UJ	0.15 UJ	0.27 UJ	0.17 UJ	0.2 UJ	0.19 UJ	0.17 UJ
ARSENIC	0.39	1.6	8.4 J	6.9	9.3 J	8.2 J	14.7 J	7.2 J	6 J	11.3
BARIUM	15000	190000	33	24.3	13.1	27.2	34.5	28.6	24.7	23.3
BERYLLIUM	160	2000	0.47	0.49 J	0.43 J	0.28 J	0.28	0.33	0.47	0.7 J
CADMIUM	70	800	0.29	0.32	0.29	0.2 J	0.16 J	0.07 J	0.1 J	0.13 J
CALCIUM			608 J	547 J	363 J	1830 J	832 J	314 J	105 J	478 J
CHROMIUM	0.29	5.6	12.1 J	9.9 J	13.8	11.5	10 J	10.3 J	8.4 J	10.7
COBALT	23	300	15.1 J	11.7	20.5 J	16.1	14.4 J	8.7 J	5.4 J	11.1 J
COPPER	3100	41000	19.2 J	14.3	22.1 J	14.5	11.2 J	8.8 J	8 J	13.9 J
IRON	55000	720000	37800	31000 J	53200	19200	25100	18000	19100	26800
LEAD	400	800	25.8 J	7.8 J	14.8	17.6 J	10.5 J	6.9 J	15.9 J	18.3
MAGNESIUM			1720	1700 J	1400 J	2320	1750	1570	1140	1240 J
MANGANESE	1800	23000	558 J	467	762	227	335 J	334 J	351 J	459
MERCURY	5.6	34	0.07	0.068	0.015 UJ	0.037 J	0.043	0.036 J	0.038 J	0.08 U
NICKEL	1500	20000	27.3	18.5	32.8	29.2 J	23.5	16	11.5	17.4

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
LOCATION ID										
SAMPLE DATE			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
POTASSIUM			325 J	545 J	353 J	325	466 J	245 J	258 J	271 J
SELENIUM	390	5100	1.1 J	3.5	4.8 UJ	1.6 J	1.2 J	1.5 J	1.4 J	3.6 UJ
SILVER	390	5100	0.072 U	0.068 J	0.08 UJ	0.12 UJ	0.075 U	0.087 U	0.083 U	0.15 UJ
SODIUM			49.1	35.9 J	15.5 UJ	93.9	44.5 J	31 J	21 J	27.1 J
THALLIUM			0.22 U	2.7	4.7	0.36 U	0.23 U	0.26 U	0.25 U	3
VANADIUM	390	5200	20.4	13.2	17.4 J	18.6	17.7	18.8	18.3	16.8
ZINC	23000	310000	90.5	57.4	125	55.1 J	46.3	34.3	27.8	51.2
MISCELLANEOUS PARAMETERS (S.U.)										
PH			NA							
MISCELLANEOUS PARAMETERS (MG/KG)										
TOTAL ORGANIC CARBON			NA							
DIOXINS/FURANS (NG/KG)										
1,2,3,4,6,7,8,9-OCDD	15000	60000	3600 J	6170 J	721 J	1940	3360 J	5910 J	1980 J	6140 J
1,2,3,4,6,7,8,9-OCDF	15000	60000	3.47 J	1.9 U	20.6 J	1.33 J	0.736 J	0.386 J	0.913 J	1.8 U
1,2,3,4,6,7,8-HPCDD	450	1800	41	52.7	39.5	15.1	25.4	37.4	24.4	53.7
1,2,3,4,6,7,8-HPCDF	450	1800	1.23 J	0.931 UJ	6.56	0.766 J	0.988 J	0.157 J	0.512 J	0.797 UJ
1,2,3,4,7,8,9-HPCDF	450	1800	0.103 J	0.115 U	0.562 J	0.118 U	0.0336 U	0.0328 U	0.0489 U	0.0841 U
1,2,3,4,7,8-HXCDD	45	180	0.395 J	0.263 J	0.576 J	0.117 U	0.2 J	0.102 J	0.261 J	0.32 J
1,2,3,4,7,8-HXCDF	45	180	0.283 J	0.232 J	0.438 J	0.283 J	0.136 J	0.035 J	0.18 J	0.118 J
1,2,3,6,7,8-HXCDD	45	180	0.569 J	0.455 J	1.63 J	0.187 J	0.26 J	0.147 J	0.347 J	0.522 J
1,2,3,6,7,8-HXCDF	45	180	0.15 J	0.171 J	0.389 J	0.204 J	0.0604 J	0.0273 U	0.0717 J	0.0663 U
1,2,3,7,8,9-HXCDD	45	180	0.592 J	0.77 J	1.36 J	0.336 J	0.334 J	0.171 J	0.498 J	0.486 J
1,2,3,7,8,9-HXCDF	45	180	0.0375 U	0.0812 U	0.163 U	0.0646 U	0.0501 U	0.0385 U	0.0425 U	0.0891 U
1,2,3,7,8-PECDD	4.5	18	0.22 J	0.173 J	0.29 J	0.0979 U	0.116 J	0.0290 U	0.0365 U	0.0776 U
1,2,3,7,8-PECDF	150	600	0.163 J	0.0588 U	0.145 U	0.0981 U	0.0907 J	0.0240 U	0.0394 U	0.0566 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-935-0001	TF4-SB-936-0001	TF4-SB-937-0001	TF4-SB-938-0001	TF4-SB-939-0001	TF4-SB-940-0001	TF4-SB-941-0001
			TF4-SB920	TF4-SB935	TF4-SB936	TF4-SB937	TF4-SB938	TF4-SB939	TF4-SB940	TF4-SB941
LOCATION ID										
SAMPLE DATE			04/22/10	04/14/10	04/14/10	04/22/10	04/22/10	04/22/10	04/22/10	04/15/10
TOP DEPTH			0 FT							
BOTTOM DEPTH			1 FT							
SACODE			NORMAL							
QC TYPE			NM							
2,3,4,6,7,8-HXCDF	45	180	0.169 J	0.0693 U	0.413 J	0.0554 U	0.0876 J	0.320 U	0.104 J	0.0761 U
2,3,4,7,8-PECDF	15	60	0.142 J	0.0583 U	0.144 U	0.0968 U	0.0977 J	0.0231 U	0.0384 U	0.0562 U
2,3,7,8-TCDD	4.5	18	0.0547 U	0.111 U	0.175 U	0.0979 U	0.0603 J	0.0354 U	0.0391 U	0.138 U
2,3,7,8-TCDF	45	180	0.258 J	0.140 U	0.137 U	0.169 U	0.0718 U	0.0588 U	0.102 U	0.103 U
TEQ BIRD	4.5	18	1.2 J	0.978 J	0.78 J	0.301 J	0.729 J	0.657 J	0.33 J	0.749 J
TEQ BIRD HALFND	4.5	18	1.23 J	1.15 J	1.02 J	0.546 J	0.767 J	0.751 J	0.442 J	0.956 J
TEQ FISH	4.5	18	0.996 J	1.03 J	0.917 J	0.271 J	0.735 J	0.688 J	0.402 J	0.85 J
TEQ FISH HALFND	4.5	18	1.03 J	1.11 J	1.06 J	0.435 J	0.74 J	0.747 J	0.455 J	0.991 J
TEQ MAMMAL	4.5	18	2.01 J	2.74 J	1.46 J	0.842 J	1.59 J	2.19 J	0.99 J	2.52 J
TEQ MAMMAL HALFND	4.5	18	2.04 J	2.83 J	1.59 J	0.977 J	1.59 J	2.25 J	1.04 J	2.66 J
TOTAL HPCDD			128	108	73.6	15.1	59.5	72.3	64.8	118
TOTAL HPCDF			2.62 J	1.04 U	17.5	0.703 J	1.53 J	0.157 J	0.512 J	0.967 U
TOTAL HXCDD			9.49	5.58 U	11 U	1.47 J	3.88	0.42 J	5.42	5.56 U
TOTAL HXCDF			1.95 J	0.778 J	7.66	1.01 J	0.698 J	0.0662 J	0.999 J	1.19 J
TOTAL PECDD			0.142 J	1.25 J	0.29 J	0.0979 U	0.236 J	0.0290 U	0.324 J	0.538 J
TOTAL PECDF			1.71 J	1.03 J	1.45 J	0.333 J	0.417 J	0.0231 U	0.748 J	1.28 J
TOTAL TCDD			0.161 J	0.111 U	0.175 U	0.0979 U	0.0298 U	0.0354 U	0.0391 U	0.138 U
TOTAL TCDF			0.98 J	0.140 U	0.137 U	0.169 U	0.551 J	0.182 J	0.391 J	0.103 U
PETROLEUM HYDROCARBONS (MG/KG)										
EXTRACTABLE PETROLEUM HYDROCARBONS			49 J	NA	NA	80 J	30 J	25 UJ	NA	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

**TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-942-0001	TF4-SB-943-0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
VOLATILES (UG/KG)					
1,1,1-TRICHLOROETHANE	8700000	38000000	5 U	8.5 U	4.3 U
1,1,2,2-TETRACHLOROETHANE	560	2800	5 U	8.5 U	4.3 U
1,1,2-TRICHLOROETHANE	1100	5300	5 U	8.5 U	4.3 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	5 U	8.5 U	4.3 U
1,1-DICHLOROETHANE	3300	17000	5 U	8.5 U	4.3 U
1,1-DICHLOROETHENE	240000	1100000	5 UJ	8.5 U	4.3 U
1,2,3-TRICHLOROBENZENE	49000	490000	5 U	8.5 U	4.3 U
1,2,4-TRICHLOROBENZENE	22000	99000	5 UJ	8.5 UJ	4.3 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	5 UJ	8.5 U	4.3 U
1,2-DIBROMOETHANE	34	170	5 U	8.5 U	4.3 U
1,2-DICHLOROBENZENE	1900000	9800000	5 U	8.5 U	4.3 U
1,2-DICHLOROETHANE	430	2200	5 U	8.5 U	4.3 U
1,2-DICHLOROPROPANE	890	4500	5 U	8.5 U	4.3 U
1,3-DICHLOROBENZENE			5 U	8.5 U	4.3 U
1,4-DICHLOROBENZENE	2400	12000	5 U	8.5 U	4.3 U
2-BUTANONE	28000000	200000000	5 U	13	4.3 U
2-HEXANONE	210000	1400000	5 UJ	8.5 UJ	4.3 UJ
4-METHYL-2-PENTANONE	5300000	53000000	5 U	8.5 U	4.3 U
ACETONE	61000000	630000000	8.4 J	44 J	25 J
BENZENE	1100	5400	5 U	8.5 U	4.3 U
BROMOCHLOROMETHANE			5 U	8.5 U	4.3 U
BROMODICHLOROMETHANE	270	1400	5 U	8.5 U	4.3 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED; U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-942-0001	TF4-SB-943-0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
BROMOFORM	61000	220000	5 U	8.5 U	4.3 U
BROMOMETHANE	7300	32000	5 U	8.5 U	4.3 U
BTEX			2 J	2 J	4.3 U
CARBON DISULFIDE	820000	3700000	5 U	8.5 U	4.3 U
CARBON TETRACHLORIDE	610	3000	5 U	8.5 U	4.3 U
CHLORO BENZENE	290000	1400000	5 U	8.5 U	4.3 U
CHLORODIBROMOMETHANE	680	3300	5 U	8.5 U	4.3 U
CHLOROETHANE	15000000	61000000	5 U	8.5 U	4.3 U
CHLOROFORM	290	1500	5 U	8.5 U	4.3 U
CHLOROMETHANE	120000	500000	5 U	8.5 U	4.3 U
CIS-1,2-DICHLOROETHENE	780000	10000000	5 U	8.5 U	4.3 U
CIS-1,3-DICHLOROPROPENE	1700	8100	5 U	8.5 U	4.3 U
CYCLOHEXANE	7000000	29000000	5 U	8.5 U	4.3 U
DICHLORODIFLUOROMETHANE	180000	780000	5 UJ	8.5 U	4.3 U
ETHYLBENZENE	5400	27000	5 U	8.5 U	4.3 U
ISOPROPYLBENZENE	2100000	11000000	5 U	8.5 U	4.3 U
M+P-XYLENES			2 J	8.5 U	4.3 U
METHYL ACETATE	78000000	1E+09	5 U	8.5 U	4.3 U
METHYL CYCLOHEXANE			5 U	8.5 U	4.3 U
METHYL TERT-BUTYL ETHER	43000	220000	5 U	8.5 U	4.3 U
METHYLENE CHLORIDE	11000	53000	5 U	8.5 U	4.3 U
O-XYLENE	3800000	19000000	5 U	8.5 U	4.3 U
STYRENE	6300000	36000000	5 U	8.5 U	4.3 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-942-0001	TF4-SB-943-0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
TETRACHLOROETHENE			550	2600	5 U
TOLUENE	5000000	45000000	5 U	8.5 U	4.3 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	5 U	8.5 U	4.3 U
TOTAL CHLORINATED ETHENES			5 UJ	8.5 U	4.3 U
TOTAL CHLORINATED VOCS			5 UJ	8.5 UJ	4.3 UJ
TOTAL XYLENES	630000	2700000	2 J	2 J	4.3 U
TRANS-1,2-DICHLOROETHENE	150000	690000	5 U	8.5 U	4.3 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	5 U	8.5 U	4.3 U
TRICHLOROETHENE	2800	14000	5 U	8.5 U	4.3 U
TRICHLOROFLUOROMETHANE	790000	3400000	5 U	8.5 U	4.3 U
VINYL CHLORIDE	60	1700	5 U	8.5 U	4.3 U
SEMIVOLATILES (UG/KG)					
1,1-BIPHENYL	3900000	51000000	330 U	480 U	360 UJ
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 UJ	4.8 U	3.6 U
1,4-DIOXANE	44000	160000	3.3 U	4.8 U	3.6 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	480 U	360 UJ
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	4.8 UJ	3.6 U
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	980 U	730 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 U	480 U	360 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	4.8 UJ	3.6 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-942-0001	TF4-SB-943-0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
2,4-DIMETHYLPHENOL			1200000	12000000	330 UJ
2,4-DINITROPHENOL	120000	1200000	670 UJ	980 UJ	730 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	480 U	360 U
2,6-DINITROTOLUENE	61000	620000	330 U	480 U	360 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	480 U	360 U
2-CHLOROPHENOL	390000	5100000	5.4	4.8 U	3.6 U
2-METHYLNAPHTHALENE	310000	4100000	5.4 J	4.8 U	3.6 UJ
2-METHYLPHENOL	3100000	31000000	3.3 UJ	4.8 U	3.6 U
2-NITROANILINE	610000	6000000	670 U	980 U	730 U
2-NITROPHENOL			330 U	480 U	360 U
3,3'-DICHLOROBENZIDINE	1100	3800	330 U	480 U	360 U
3-NITROANILINE			670 U	980 U	730 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	980 UJ	730 UJ
4-BROMOPHENYL PHENYL ETHER			330 U	480 U	360 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	4.8 UJ	3.6 U
4-CHLOROANILINE	2400	8600	330 UJ	480 UJ	360 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	480 U	360 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	4.8 U	3.6 U
4-NITROANILINE	24000	86000	670 U	980 U	730 U
4-NITROPHENOL			670 UJ	980 UJ	730 U
ACENAPHTHENE	3400000	33000000	6.2	4.8 U	3.6 U
ACENAPHTHYLENE	3400000	33000000	24	17	3.6 U
ACETOPHENONE	7800000	100000000	330 U	480 U	360 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED; U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-942-0001	TF4-SB-943-0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
ANTHRACENE			17000000	170000000	48
ATRAZINE	2100	7500	3.3 U	4.8 U	3.6 U
BENZALDEHYDE	7800000	100000000	330 UJ	480 UJ	360 UJ
BENZO(A)ANTHRACENE	150	2100	160	120	14
BENZO(A)PYRENE	15	210	130	140 J	10
BENZO(B)FLUORANTHENE	150	2100	210	220 J	21 J
BENZO(G,H,I)PERYLENE	1700000	17000000	72	100	6
BENZO(K)FLUORANTHENE	1500	21000	210	71	7.4 J
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 UJ	480 U	360 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	480 U	360 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	120 J	360 U
BUTYL BENZYL PHTHALATE	260000	910000	330 U	480 U	360 U
CAPROLACTAM	31000000	310000000	330 U	480 U	360 U
CARBAZOLE			330 U	480 U	360 U
CHRYSENE	15000	210000	160	130	14
DIBENZO(A,H)ANTHRACENE	15	210	34	29 J	3.6 UJ
DIBENZOFURAN	78000	1000000	330 U	480 U	360 U
DIETHYL PHTHALATE	49000000	490000000	330 U	480 U	360 U
DIMETHYL PHTHALATE			330 U	480 U	360 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	480 U	360 U
DI-N-OCTYL PHTHALATE			330 U	480 U	360 U
FLUORANTHENE	2300000	22000000	160	240	29

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED; U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920- 0001	TF4-SB-942- 0001	TF4-SB-943- 0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
FLUORENE	2300000	22000000	11	6.6	3.6 U
HEXACHLOROBENZENE	300	1100	3.3 U	4.8 U	3.6 U
HEXACHLOROBUTADIENE	6200	22000	330 U	480 U	360 U
HEXACHLOROCYCLOPENT ADIENE	370000	3700000	330 UJ	480 UJ	360 UJ
HEXACHLOROETHANE	35000	120000	330 U	480 U	360 U
HIGH MOLECULAR WEIGHT PAHS			1360	1330 J	131 J
INDENO(1,2,3-CD)PYRENE	150	2100	72	93 J	5.7 J
ISOPHORONE	510000	1800000	330 UJ	480 U	360 U
LOW MOLECULAR WEIGHT PAHS			195 J	151	15.3 J
NAPHTHALENE	3600	18000	6.2	4.8 U	3.6 U
NITROBENZENE	4800	24000	330 UJ	480 U	360 UJ
N-NITROSO-DI-N- PROPYLAMINE	69	250	330 UJ	480 U	360 U
N- NITROSODIPHENYLAMINE	99000	350000	330 U	480 U	360 U
PENTACHLOROPHENOL	3000	9000	670 UJ	48 U	730 UJ
PHENANTHRENE	1700000	17000000	94	100	11
PHENOL	18000000	180000000	31	4.8 U	3.6 U
PYRENE	1700000	17000000	150	190	24
TOTAL CARCINOGENIC PAHS-HALFND	15	210	976	803 J	73.9 J
TOTAL CARCINOGENIC PAHS-POS	15	210	976	803 J	72.1 J
TOTAL CHLORINATED VOCS			330 U	480 U	360 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-942-0001	TF4-SB-943-0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
TOTAL PAHS					1550 J
PESTICIDES/PCBS (UG/KG)					
4,4'-DDD	2000	7200	3.3 U	4.8 U	3.6 U
4,4'-DDE	1400	5100	3.3 U	4.8 U	3.6 U
4,4'-DDT	1700	7000	3.3 U	30 UJ	3.6 UJ
ALDRIN	29	100	1.7 U	2.5 U	1.8 UJ
ALPHA-BHC	77	270	1.7 U	2.5 U	1.8 U
ALPHA-CHLORDANE	1600	6500	1.7 U	2.5 U	1.8 U
AROCLOR-1016	3900	21000	33 U	48 U	36 U
AROCLOR-1221	140	540	33 U	48 U	36 U
AROCLOR-1232	140	540	33 U	48 U	36 U
AROCLOR-1242	220	740	33 U	48 U	36 U
AROCLOR-1248	220	740	33 U	48 U	36 U
AROCLOR-1254	220	740	33 U	48 U	36 U
AROCLOR-1260	220	740	33 U	48 U	36 U
AROCLOR-1262			33 U	48 U	36 U
AROCLOR-1268			33 U	48 U	36 U
BETA-BHC	270	960	1.7 U	6.1 J	1.8 UJ
DELTA-BHC	77	270	1.7 U	3.9	1.8 U
DIELDRIN	30	110	3.3 U	4.8 U	3.6 U
ENDOSULFAN I	370000	3700000	1.7 U	2.5	1.8 U
ENDOSULFAN II	370000	3700000	3.3 U	4.8 U	3.6 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	4.8 J	3.6 U
ENDRIN	18000	180000	3.3 U	4.8 U	3.6 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	4.8 U	3.6 U
ENDRIN KETONE	18000	180000	3.3 U	4.8 U	3.6 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-942-0001	TF4-SB-943-0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
GAMMA-BHC (LINDANE)			520	2100	1.7 U
GAMMA-CHLORDANE	1600	6500	1.7 U	2.5 U	1.8 U
HEPTACHLOR	110	380	1.7 U	2.5 U	1.8 U
HEPTACHLOR EPOXIDE	53	190	1.7 U	2.5 U	1.8 U
METHOXYCHLOR	310000	3100000	17 U	25 U	18 UJ
TOTAL AROCLOR	220	740	33 U	48 U	36 U
TOTAL CHLORDANE			1.7 U	2.5 U	1.8 U
TOTAL DDD/DDE/DDT			3.3 U	13.2 UJ	3.6 UJ
TOXAPHENE	440	1600	170 U	250 U	180 U
METALS (MG/KG)					
ALUMINUM	77000	990000	9860	7390	5300
ANTIMONY	31	410	0.16 UJ	0.21 UJ	0.15 UJ
ARSENIC	0.39	1.6	8.4 J	10.8 J	59.5
BARIUM	15000	190000	33	30.9	19.8
BERYLLIUM	160	2000	0.47	0.14 J	0.51 J
CADMIUM	70	800	0.29	0.29 J	0.3
CALCIUM			608 J	1450 J	1900 J
CHROMIUM	0.29	5.6	12.1 J	10	11
COBALT	23	300	15.1 J	12	20.4 J
COPPER	3100	41000	19.2 J	17.9	16.1 J
IRON	55000	720000	37800	25700	48400
LEAD	400	800	25.8 J	28.8 J	30.1
MAGNESIUM			1720	2100	1870 J
MANGANESE	1800	23000	558 J	591	818
MERCURY	5.6	34	0.07	0.064	0.019 UJ
NICKEL	1500	20000	27.3	20.8 J	37.1

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0001	TF4-SB-942-0001	TF4-SB-943-0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
POTASSIUM					325 J
SELENIUM	390	5100	1.1 J	1.2 J	5.1 UJ
SILVER	390	5100	0.072 U	0.091 U	0.19 UJ
SODIUM			49.1	45.2 J	16.7 UJ
THALLIUM			0.22 U	0.28 U	5.3
VANADIUM	390	5200	20.4	15.8	12.6 J
ZINC	23000	310000	90.5	82 J	110
MISCELLANEOUS PARAMETERS (S.U.)					
PH			NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/KG)					
TOTAL ORGANIC CARBON			NA	NA	NA
DIOXINS/FURANS (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	15000	60000	3600 J	2360 J	1370 J
1,2,3,4,6,7,8,9-OCDF	15000	60000	3.47 J	26.9	7.7
1,2,3,4,6,7,8-HPCDD	450	1800	41	63.1	39.4
1,2,3,4,6,7,8-HPCDF	450	1800	1.23 J	8.41	3.19
1,2,3,4,7,8,9-HPCDF	450	1800	0.103 J	0.682 J	0.258 J
1,2,3,4,7,8-HXCDD	45	180	0.395 J	0.855 J	0.452 J
1,2,3,4,7,8-HXCDF	45	180	0.283 J	0.577 J	0.41 J
1,2,3,6,7,8-HXCDD	45	180	0.569 J	2.09 J	1.05 J
1,2,3,6,7,8-HXCDF	45	180	0.15 J	0.574 J	0.244 J
1,2,3,7,8,9-HXCDD	45	180	0.592 J	1.58 J	1.18 J
1,2,3,7,8,9-HXCDF	45	180	0.0375 U	0.154 U	0.0984 U
1,2,3,7,8-PECDD	4.5	18	0.22 J	0.442 J	0.267 J
1,2,3,7,8-PECDF	150	600	0.163 J	0.0988 U	0.0531 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.1
ANALYTICAL RESULTS - SURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920- 0001	TF4-SB-942- 0001	TF4-SB-943- 0001
LOCATION ID			TF4-SB920	TF4-SB942	TF4-SB943
SAMPLE DATE			04/22/10	04/20/10	04/15/10
TOP DEPTH			0 FT	0 FT	0 FT
BOTTOM DEPTH			1 FT	1 FT	1 FT
SACODE			NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM
2,3,4,6,7,8-HXCDF			45	180	0.169 J
2,3,4,7,8-PECDF	15	60	0.142 J	0.0976 U	0.0527 U
2,3,7,8-TCDD	4.5	18	0.0547 U	0.0760 U	0.0902 U
2,3,7,8-TCDF	45	180	0.258 J	0.298 J	0.0949 U
TEQ BIRD	4.5	18	1.2 J	1.52 J	0.723 J
TEQ BIRD HALFND	4.5	18	1.23 J	1.62 J	0.849 J
TEQ FISH	4.5	18	0.996 J	1.48 J	0.82 J
TEQ FISH HALFND	4.5	18	1.03 J	1.55 J	0.887 J
TEQ MAMMAL	4.5	18	2.01 J	2.53 J	1.47 J
TEQ MAMMAL HALFND	4.5	18	2.04 J	2.59 J	1.53 J
TOTAL HPCDD			128	117	80.2
TOTAL HPCDF			2.62 J	23.1	7.22
TOTAL HXCDD			9.49	12.4	9.12 U
TOTAL HXCDF			1.95 J	12.4	4.54
TOTAL PECDD			0.142 J	1.08 J	0.898 J
TOTAL PECDF			1.71 J	7.6	2.23 J
TOTAL TCDD			0.161 J	0.0760 U	0.0902 U
TOTAL TCDF			0.98 J	2.25	0.835 J
PETROLEUM HYDROCARBONS (MG/KG)					
EXTRACTABLE PETROLEUM HYDROCARBONS			49 J	79	NA

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
LOCATION ID			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
VOLATILES (UG/KG)									
1,1,1-TRICHLOROETHANE	8700000	38000000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,1,2,2-TETRACHLOROETHANE	560	2800	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,1,2-TRICHLOROETHANE	1100	5300	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,1-DICHLOROETHANE	3300	17000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,1-DICHLOROETHENE	240000	1100000	4.2 UJ	3.9 U	4.5 UJ	4.2 UJ	5.7 U	13 U	7.2 UJ
1,2,3-TRICHLOROBENZENE	49000	490000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,2,4-TRICHLOROBENZENE	22000	99000	4.2 UJ	3.9 UJ	4.5 UJ	4.2 UJ	5.7 UJ	13 UJ	7.2 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,2-DIBROMOETHANE	34	170	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,2-DICHLOROBENZENE	1900000	9800000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,2-DICHLOROETHANE	430	2200	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,2-DICHLOROPROPANE	890	4500	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,3-DICHLOROBENZENE			4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
1,4-DICHLOROBENZENE	2400	12000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
2-BUTANONE	28000000	200000000	4.2 UJ	3.9 U	6.8 J	4.2 UJ	7 J	30	16 J
2-HEXANONE	210000	1400000	4.2 UJ	3.9 UJ	4.5 UJ	4.2 UJ	5.7 UJ	13 UJ	7.2 UJ
4-METHYL-2-PENTANONE	5300000	53000000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
ACETONE	61000000	630000000	4.2 UJ	3.9 J	37 J	3.5 J	19.5 J	72 J	50 J
BENZENE	1100	5400	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
BROMOCHLOROMETHANE			4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
BROMODICHLOROMETHANE	270	1400	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
BROMOFORM	61000	220000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
BROMOMETHANE	7300	32000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
LOCATION ID			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BTEX			4.2 UJ	3.9 U	4.5 U	4.2 U	2.2 J	9.3 J	1.8 J
CARBON DISULFIDE	820000	3700000	4.2 UJ	3.9 U	0.96 J	4.2 U	5.7 U	12 J	7.2 UJ
CARBON TETRACHLORIDE	610	3000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
CHLOROENZENE	290000	1400000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
CHLORODIBROMOMETHANE	680	3300	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
CHLOROETHANE	15000000	61000000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
CHLOROFORM	290	1500	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
CHLOROMETHANE	120000	500000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
CIS-1,2-DICHLOROETHENE	780000	10000000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
CIS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
CYCLOHEXANE	7000000	29000000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
DICHLORODIFLUOROMETHANE	180000	780000	4.2 UJ	3.9 U	4.5 UJ	4.2 UJ	5.7 U	13 U	7.2 UJ
ETHYLBENZENE	5400	27000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
ISOPROPYLBENZENE	2100000	11000000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
M+P-XYLENES			4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
METHYL ACETATE	78000000	1E+09	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
METHYL CYCLOHEXANE			4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
METHYL TERT-BUTYL ETHER	43000	220000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
METHYLENE CHLORIDE	11000	53000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
O-XYLENE	3800000	19000000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
STYRENE	6300000	36000000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
TETRACHLOROETHENE	550	2600	4.2 UJ	3.9 U	4.5 UJ	4.2 UJ	5.7 U	13 U	7.2 UJ
TOLUENE	5000000	45000000	4.2 UJ	3.9 U	4.5 U	4.2 U	2.2 J	5.6 J	1.8 J
TOTAL 1,2-DICHLOROETHENE	700000	9200000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
TOTAL CHLORINATED ETHENES			4.2 UJ	3.9 U	4.5 UJ	4.2 UJ	5.7 U	13 U	7.2 UJ
TOTAL CHLORINATED VOCS			4.2 UJ	3.9 UJ	4.5 UJ	4.2 UJ	5.7 UJ	13 UJ	7.2 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
LOCATION ID			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL XYLENES	630000	2700000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	3.7 J	7.2 UJ
TRANS-1,2-DICHLOROETHENE	150000	690000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
TRANS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
TRICHLOROETHENE	2800	14000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
TRICHLOROFUOROMETHANE	790000	3400000	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
VINYL CHLORIDE	60	1700	4.2 UJ	3.9 U	4.5 U	4.2 U	5.7 U	13 U	7.2 UJ
SEMIVOLATILES (UG/KG)									
1,1-BIPHENYL	3900000	51000000	330 U	330 U	330 U	390 U	430 UJ	610 UJ	520 UJ
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 UJ	3.3 UJ	3.3 UJ	3.9 U	4.25 U	6.1 U	5.2 U
1,4-DIOXANE	44000	160000	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.1 U	5.2 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	330 UJ	330 UJ	390 U	430 UJ	610 UJ	520 UJ
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	3.3 U	3.3 U	3.9 UJ	4.25 UJ	6.1 UJ	5.2 UJ
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	670 U	670 U	785 U	875 UJ	1200 U	1100 UJ
2,4,6-TRICHLOROPHENOL	44000	160000	330 UJ	330 U	330 U	390 U	430 UJ	610 U	520 UJ
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	3.3 U	3.3 U	3.9 UJ	4.25 UJ	6.1 UJ	5.2 UJ
2,4-DIMETHYLPHENOL	1200000	12000000	330 UJ	330 UJ	330 UJ	3.9 UJ	430 UJ	610 UJ	520 UJ
2,4-DINITROPHENOL	120000	1200000	670 UJ	670 UJ	670 UJ	785 UJ	875 UJ	1200 UJ	1100 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
2,6-DINITROTOLUENE	61000	620000	330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
2-CHLORONAPHTHALENE	6300000	82000000	330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
2-CHLOROPHENOL	390000	5100000	4.8	3.9	3.3 U	3.9 U	4.25 U	6.1 U	5.2 U
2-METHYLNAPHTHALENE	310000	4100000	13 J	3.3 UJ	3.3 UJ	3.9 U	4.25 U	6.1 U	5.2 U
2-METHYLPHENOL	3100000	31000000	3.3 UJ	3.3 UJ	3.3 UJ	3.9 U	430 UJ	610 U	520 UJ
2-NITROANILINE	610000	6000000	670 U	670 U	670 U	785 U	875 UJ	1200 U	1100 UJ
2-NITROPHENOL			330 UJ	330 U	330 U	390 U	430 UJ	610 U	520 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
LOCATION ID			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
3,3'-DICHLOROBENZIDINE			1100	3800	330 U	330 U	330 U	390 U	430 UJ
3-NITROANILINE			670 U	670 U	670 U	785 U	875 UJ	1200 U	1100 UJ
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	670 UJ	670 UJ	785 U	875 UJ	1200 U	1100 UJ
4-BROMOPHENYL PHENYL ETHER			330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	3.3 U	3.3 U	3.9 UJ	4.25 UJ	6.1 UJ	5.2 UJ
4-CHLOROANILINE	2400	8600	330 UJ	330 UJ	330 UJ	390 UJ	430 UJ	610 UJ	520 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
4-METHYLPHENOL	310000	3100000	3.3 UJ	3.3 UJ	3.3 UJ	3.9 U	4.25 UJ	6.1 UJ	5.2 UJ
4-NITROANILINE	24000	86000	670 U	670 U	670 U	785 U	875 UJ	1200 U	1100 UJ
4-NITROPHENOL			670 UJ	670 UJ	670 UJ	785 U	875 UJ	1200 U	1100 UJ
ACENAPHTHENE	3400000	33000000	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.1 U	5.2 U
ACENAPHTHYLENE	3400000	33000000	3.3 U	3.3 U	3.3 U	3.9 U	12	6.1 U	5.2 U
ACETOPHENONE	7800000	100000000	330 UJ	330 U	330 U	390 U	430 UJ	610 UJ	520 UJ
ANTHRACENE	17000000	170000000	3.3 U	3.3 U	3.3 U	3.9 U	7.8 J	6.1 U	5.2 U
ATRAZINE	2100	7500	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.1 U	5.2 U
BENZALDEHYDE	7800000	100000000	330 UJ	330 UJ	330 UJ	390 UJ	430 UJ	610 UJ	520 UJ
BENZO(A)ANTHRACENE	150	2100	3.9	3.3 U	3.3 U	3.9 U	29	6.1 U	8
BENZO(A)PYRENE	15	210	3.3 U	3.3 U	3.3 U	3.9 U	36.5 J	6.1 U	5.9 J
BENZO(B)FLUORANTHENE	150	2100	3.3 U	3.3 U	3.3 U	3.9 UJ	64 J	6.1 U	9.2 J
BENZO(G,H,I)PERYLENE	1700000	17000000	3.3 U	3.3 U	3.3 U	3.9 U	30.5	6.1 U	5.2 U
BENZO(K)FLUORANTHENE	1500	21000	3.3 U	3.3 U	3.3 U	3.9 U	21.5	6.1 U	7.2
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 UJ	330 UJ	330 UJ	390 U	430 UJ	610 U	520 UJ
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	330 UJ	330 UJ	390 U	430 UJ	610 U	520 UJ
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	41 J	330 U	80 J	430 UJ	100 J	87 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
LOCATION ID									
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BUTYL BENZYL PHTHALATE	260000	910000	330 U	69 J	330 U	390 U	430 UJ	610 U	520 UJ
CAPROLACTAM	31000000	310000000	330 UJ	330 U	330 U	390 U	430 UJ	610 U	520 UJ
CARBAZOLE			330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
CHRYSENE	15000	210000	4.3	3.3 U	3.3 U	3.9 U	36	6.1 U	8.1
DIBENZO(A,H)ANTHRACENE	15	210	3.3 U	3.3 U	3.3 U	3.9 U	8.45 J	6.1 UJ	5.2 UJ
DIBENZOFURAN	78000	1000000	330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
DIETHYL PHTHALATE	49000000	490000000	330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
DIMETHYL PHTHALATE			330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ
DI-N-OCTYL PHTHALATE			330 UJ	330 U	330 U	390 UJ	430 UJ	610 U	520 UJ
FLUORANTHENE	2300000	22000000	4.4	3.3 U	3.3 U	3.9 U	53.5	6.1 U	10
FLUORENE	2300000	22000000	3.3 U	3.3 U	3.3 U	3.9 U	3.35	6.1 U	5.2 U
HEXACHLOROBENZENE	300	1100	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.1 U	5.2 U
HEXACHLOROBUTADIENE	6200	22000	330 UJ	330 U	330 U	390 U	430 UJ	610 U	520 UJ
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	330 UJ	330 UJ	390 UJ	430 UJ	610 UJ	520 UJ
HEXACHLOROETHANE	35000	120000	330 UJ	330 U	330 U	390 U	430 UJ	610 U	520 UJ
HIGH MOLECULAR WEIGHT PAHS			17.5 J	3.3 U	3.3 U	3.9 UJ	354 J	6.1 UJ	57.9 J
INDENO(1,2,3-CD)PYRENE	150	2100	3.3 U	3.3 U	3.3 U	3.9 UJ	27.5 J	6.1 UJ	5.2 UJ
ISOPHORONE	510000	1800000	330 UJ	330 UJ	330 UJ	390 U	430 UJ	610 U	520 UJ
LOW MOLECULAR WEIGHT PAHS			26.4 J	3.3 UJ	3.3 UJ	3.9 U	42.6 J	6.1 U	5.2 U
NAPHTHALENE	3600	18000	6.5	3.3 U	3.3 U	3.9 U	4.25 U	6.1 U	5.2 U
NITROBENZENE	4800	24000	330 UJ	330 UJ	330 UJ	390 U	430 UJ	610 UJ	520 UJ
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	330 UJ	330 UJ	390 U	430 UJ	610 U	520 UJ
N-NITROSODIPHENYLAMINE	99000	350000	330 U	330 U	330 U	390 U	430 UJ	610 U	520 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

**TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
LOCATION ID			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
PENTACHLOROPHENOL	3000	9000	670 UJ	670 UJ	670 UJ	39 U	42.5 U	61 U	52 U
PHENANTHRENE	1700000	17000000	6.9 J	3.3 U	3.3 U	3.9 U	20.5 J	6.1 U	5.2 U
PHENOL	18000000	180000000	30	25	31	27.5	4.25 U	6.1 U	5.2 U
PYRENE	1700000	17000000	4.9 J	3.3 U	3.3 U	3.9 U	47	6.1 U	9.5
TOTAL CARCINOGENIC PAHS-HALFND	15	210	16.4	3.3 U	3.3 U	3.9 UJ	223 J	6.1 UJ	43.6 J
TOTAL CARCINOGENIC PAHS-POS	15	210	8.2	3.3 U	3.3 U	3.9 UJ	223 J	6.1 UJ	38.4 J
TOTAL CHLORINATED VOCS			330 UJ	330 U	330 U	390 U	430 UJ	610 U	520 UJ
TOTAL PAHS			43.9 J	3.3 UJ	3.3 UJ	3.9 UJ	397 J	6.1 UJ	57.9 J
PESTICIDES/PCBS (UG/KG)									
4,4'-DDD	2000	7200	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
4,4'-DDE	1400	5100	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
4,4'-DDT	1700	7000	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
ALDRIN	29	100	1.7 U	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
ALPHA-BHC	77	270	1.7 U	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
ALPHA-CHLORDANE	1600	6500	1.7 UJ	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
AROCLOR-1016	3900	21000	33 U	33 U	33 U	39 U	42.5 U	62 U	52 U
AROCLOR-1221	140	540	33 U	33 U	33 U	39 U	42.5 U	62 U	52 U
AROCLOR-1232	140	540	33 U	33 U	33 U	39 U	42.5 U	62 U	52 U
AROCLOR-1242	220	740	33 U	33 U	33 U	39 U	42.5 U	62 U	52 U
AROCLOR-1248	220	740	33 U	33 U	33 U	39 U	42.5 U	62 U	52 U
AROCLOR-1254	220	740	33 U	33 U	33 U	39 U	42.5 U	62 U	52 U
AROCLOR-1260	220	740	33 U	33 U	33 U	39 U	42.5 U	62 U	52 U
AROCLOR-1262			33 U	33 U	33 U	39 U	42.5 U	62 U	52 U
AROCLOR-1268			33 U	33 U	33 U	39 U	42.5 U	62 U	52 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
LOCATION ID			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BETA-BHC			270	960	1.7 U	1.7 U	1.7 U	2 U	2.2 U
DELTA-BHC	77	270	1.7 U	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
DIELDRIN	30	110	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
ENDOSULFAN I	370000	3700000	1.7 U	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
ENDOSULFAN II	370000	3700000	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
ENDOSULFAN SULFATE	370000	3700000	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
ENDRIN	18000	180000	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
ENDRIN ALDEHYDE	18000	180000	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
ENDRIN KETONE	18000	180000	3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
GAMMA-BHC (LINDANE)	520	2100	1.7 U	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
GAMMA-CHLORDANE	1600	6500	1.7 UJ	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
HEPTACHLOR	110	380	1.7 U	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
HEPTACHLOR EPOXIDE	53	190	1.7 U	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
METHOXYCHLOR	310000	3100000	17 UJ	17 U	17 U	20 U	22 U	32 U	27 UJ
TOTAL AROCLOR	220	740	33 U	33 U	33 U	39 U	42.5 U	62 U	52 U
TOTAL CHLORDANE			1.7 UJ	1.7 U	1.7 U	2 U	2.2 U	3.2 U	2.7 UJ
TOTAL DDD/DDE/DDT			3.3 U	3.3 U	3.3 U	3.9 U	4.25 U	6.2 U	5.2 UJ
TOXAPHENE	440	1600	170 U	170 U	170 U	200 U	220 U	320 U	270 UJ
METALS (MG/KG)									
ALUMINUM	77000	990000	10400	981	17200	5160 J	12200	13700	10700
ANTIMONY	31	410	0.11 UJ	0.16 UJ	0.21 UJ	0.15 UJ	0.205 UJ	0.25 UJ	0.19 UJ
ARSENIC	0.39	1.6	6.5 J	9 J	20.2 J	10.6 J	10.8 J	20 J	13.3 J
BARIUM	15000	190000	30	2.3 J	36.8 J	4.85 J	34.2	27.7 J	45.8
BERYLLIUM	160	2000	0.43	0.21 J	0.78	0.22 J	0.18 J	0.38 J	0.25 J
CADMIUM	70	800	0.16	0.45	0.38	0.41	0.092 J	0.018 U	0.014 U
CALCIUM			280 J	6 UJ	7.8 UJ	338 J	197 J	525 J	215 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
LOCATION ID			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
CHROMIUM	0.29	5.6	11.9 J	4.3 J	17.3 J	11.4	12.5	16.5	12.2
COBALT	23	300	13.1 J	22.3 J	35.3 J	18.2	11.7	22.7	14.3
COPPER	3100	41000	6.1 J	19 J	8.9 J	20.6	17	14.3	10.4
IRON	55000	720000	25000	61600	59800	49300	29000	45000	38100
LEAD	400	800	8.1 J	8.8 J	9.2 J	8.25 J	20.5 J	13.5 J	10.9 J
MAGNESIUM			1750	836	2600	2260	2700	3610	2570
MANGANESE	1800	23000	471 J	729 J	775 J	332	335	318	314
MERCURY	5.6	34	0.028 J	0.0064 U	0.033 J	0.0062 U	0.0666 J	0.032 J	0.055 J
NICKEL	1500	20000	26.4	58.4	77	54.1 J	21.4 J	26.2 J	21.2 J
POTASSIUM			259 J	120 J	313 J	198	500 J	616 J	438 J
SELENIUM	390	5100	0.72 J	0.71 U	0.93 U	0.64 U	0.725 J	1.1 U	1.1 J
SILVER	390	5100	0.048 U	0.072 U	0.094 U	0.0645 UJ	0.0885 U	0.11 U	0.082 U
SODIUM			46.9	18 J	64.6	15.4 J	254 J	664 J	479 J
THALLIUM			0.15 U	0.22 U	0.28 U	0.195 U	0.27 U	0.33 U	0.25 U
VANADIUM	390	5200	18.3	10.8	30.2	12	20.4	23.7	18.7
ZINC	23000	310000	47.6	130	112	142 J	64.8 J	70.3 J	46 J
MISCELLANEOUS PARAMETERS (S.U.)									
PH			NA	5.8	NA	6	NA	6.7	NA
MISCELLANEOUS PARAMETERS (MG/KG)									
TOTAL ORGANIC CARBON			NA	17000	NA	7300	NA	34000	NA
DIOXINS/FURANS (NG/KG)									
1,2,3,4,6,7,8,9-OCDD	15000	60000	4480 J	NA	2030 J	NA	5580 J	NA	3810 J
1,2,3,4,6,7,8,9-OCDF	15000	60000	0.136 U	NA	0.091 J	NA	1.03 J	NA	0.517 J
1,2,3,4,6,7,8-HPCDD	450	1800	38.7	NA	16.4	NA	41.8 J	NA	59.7

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
LOCATION ID			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
SAMPLE DATE			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
TOP DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
BOTTOM DEPTH			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
SACODE			NM	NM	NM	NM	NM	NM	NM
QC TYPE									
1,2,3,4,6,7,8-HPCDF	450	1800	0.175 J	NA	0.0298 U	NA	0.695 J	NA	0.342 J
1,2,3,4,7,8,9-HPCDF	450	1800	0.122 U	NA	0.0405 U	NA	0.104 U	NA	0.0742 U
1,2,3,4,7,8-HXCDD	45	180	0.212 J	NA	0.0883 U	NA	0.244 J	NA	0.355 J
1,2,3,4,7,8-HXCDF	45	180	0.0775 U	NA	0.0374 U	NA	0.195 J	NA	0.118 J
1,2,3,6,7,8-HXCDD	45	180	0.82 J	NA	0.107 J	NA	0.406 J	NA	0.857 J
1,2,3,6,7,8-HXCDF	45	180	0.733 U	NA	0.0356 U	NA	0.14 J	NA	0.0483 U
1,2,3,7,8,9-HXCDD	45	180	0.84 J	NA	0.189 J	NA	0.556 J	NA	1.01 J
1,2,3,7,8,9-HXCDF	45	180	0.0985 U	NA	0.0464 U	NA	0.132 U	NA	0.0629 U
1,2,3,7,8-PECDD	4.5	18	0.140 U	NA	0.0871 U	NA	0.114 U	NA	0.158 J
1,2,3,7,8-PECDF	150	600	0.109 U	NA	0.0536 U	NA	0.0927 U	NA	0.0683 U
2,3,4,6,7,8-HXCDF	45	180	0.0841 U	NA	0.0399 U	NA	0.156 J	NA	0.0540 U
2,3,4,7,8-PECDF	15	60	0.108 U	NA	0.0529 U	NA	0.0908 J	NA	0.0675 U
2,3,7,8-TCDD	4.5	18	0.266 U	NA	0.0578 U	NA	0.124 U	NA	0.105 U
2,3,7,8-TCDF	45	180	0.248 U	NA	0.0715 U	NA	0.177 J	NA	0.150 U
TEQ BIRD	4.5	18	0.591 J	NA	0.239 J	NA	0.916 J	NA	0.741 J
TEQ BIRD HALFND	4.5	18	1.03 J	NA	0.387 J	NA	1.12 J	NA	0.915 J
TEQ FISH	4.5	18	0.611 J	NA	0.222 J	NA	0.806 J	NA	0.81 J
TEQ FISH HALFND	4.5	18	0.9 J	NA	0.342 J	NA	0.971 J	NA	0.894 J
TEQ MAMMAL	4.5	18	1.92 J	NA	0.803 J	NA	2.28 J	NA	2.14 J
TEQ MAMMAL HALFND	4.5	18	2.2 J	NA	0.9 J	NA	2.44 J	NA	2.22 J
TOTAL HPCDD			81.5	NA	16.4	NA	98.2 J	NA	131
TOTAL HPCDF			0.175 J	NA	0.0298 U	NA	0.582 J	NA	0.342 J
TOTAL HXCDD			9.73	NA	0.189 J	NA	7.5 J	NA	14.6
TOTAL HXCDF			0.0733 U	NA	0.0356 U	NA	1.66 J	NA	0.632 J
TOTAL PECDD			0.140 U	NA	0.0871 U	NA	0.383 J	NA	1.35 J
TOTAL PECDF			0.108 U	NA	0.0529 U	NA	2	NA	0.0675 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-920-0810	TF4-SB-921-0204	TF4-SB-921-0810-AVG	TF4-SB-922-0204-AVG	TF4-SB-922-0608	TF4-SB-923-0204
LOCATION ID			TF4-SB920	TF4-SB920	TF4-SB921	TF4-SB921	TF4-SB922	TF4-SB922	TF4-SB923
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/19/10	04/19/10	04/19/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL TCDD					0.266 U	NA	0.0578 U	NA	0.124 U
TOTAL TCDF			0.248 U	NA	0.0715 U	NA	0.941	NA	0.423 J
PETROLEUM HYDROCARBONS (MG/KG)									
EXTRACTABLE PETROLEUM HYDROCARBONS			66 J	22 UJ	24 UJ	28 UJ	30.5 J	23 U	19 U

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
LOCATION ID			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
VOLATILES (UG/KG)									
1,1,1-TRICHLOROETHANE	8700000	38000000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,1,2,2-TETRACHLOROETHANE	560	2800	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,1,2-TRICHLOROETHANE	1100	5300	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,1-DICHLOROETHANE	3300	17000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,1-DICHLOROETHENE	240000	1100000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 UJ	4.3 UJ	4.9 U
1,2,3-TRICHLOROBENZENE	49000	490000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,2,4-TRICHLOROBENZENE	22000	99000	4.2 UJ	6.7 UJ	4.3 UJ	3.7 UJ	4.3 UJ	4.3 UJ	4.9 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 UJ	4.3 UJ	4.9 U
1,2-DIBROMOETHANE	34	170	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,2-DICHLOROBENZENE	1900000	9800000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,2-DICHLOROETHANE	430	2200	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,2-DICHLOROPROPANE	890	4500	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,3-DICHLOROBENZENE			4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
1,4-DICHLOROBENZENE	2400	12000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
2-BUTANONE	28000000	200000000	4.2 UJ	11	6.4 J	3.7 UJ	4.3 U	4.3 U	23
2-HEXANONE	210000	1400000	4.2 UJ	6.7 UJ	4.3 UJ	3.7 UJ	4.3 UJ	4.3 UJ	4.9 UJ
4-METHYL-2-PENTANONE	5300000	53000000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
ACETONE	61000000	630000000	4.2 UJ	36 J	19 J	10.5 J	4.3 UJ	3.7 J	59.5 J
BENZENE	1100	5400	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
BROMOCHLOROMETHANE			4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
BROMODICHLOROMETHANE	270	1400	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
BROMOFORM	61000	220000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
BROMOMETHANE	7300	32000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
LOCATION ID			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BTEX			4.2 UJ	4.5 J	2.4 J	3.7 U	4.3 U	4.3 U	4.9 U
CARBON DISULFIDE	820000	3700000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	2.45 J
CARBON TETRACHLORIDE	610	3000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
CHLOROENZENE	290000	1400000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
CHLORODIBROMOMETHANE	680	3300	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
CHLOROETHANE	15000000	61000000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
CHLOROFORM	290	1500	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
CHLOROMETHANE	120000	500000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
CIS-1,2-DICHLOROETHENE	780000	10000000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
CIS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
CYCLOHEXANE	7000000	29000000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
DICHLORODIFLUOROMETHANE	180000	780000	4.2 UJ	6.7 U	4.3 U	3.7 UJ	4.3 UJ	4.3 UJ	4.9 U
ETHYLBENZENE	5400	27000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
ISOPROPYLBENZENE	2100000	11000000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
M+P-XYLENES			4.2 UJ	6.7 U	2.4 J	3.7 U	4.3 U	4.3 U	4.9 U
METHYL ACETATE	78000000	1E+09	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
METHYL CYCLOHEXANE			4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
METHYL TERT-BUTYL ETHER	43000	220000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
METHYLENE CHLORIDE	11000	53000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
O-XYLENE	3800000	19000000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
STYRENE	6300000	36000000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
TETRACHLOROETHENE	550	2600	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
TOLUENE	5000000	45000000	4.2 UJ	2.6 J	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
TOTAL CHLORINATED ETHENES			4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 UJ	4.3 UJ	4.9 U
TOTAL CHLORINATED VOCS			4.2 UJ	6.7 UJ	4.3 UJ	3.7 UJ	4.3 UJ	4.3 UJ	4.9 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
LOCATION ID			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL XYLENES	630000	2700000	4.2 UJ	1.9 J	2.4 J	3.7 U	4.3 U	4.3 U	4.9 U
TRANS-1,2-DICHLOROETHENE	150000	690000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
TRICHLOROETHENE	2800	14000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
TRICHLOROFUOROMETHANE	790000	3400000	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
VINYL CHLORIDE	60	1700	4.2 UJ	6.7 U	4.3 U	3.7 U	4.3 U	4.3 U	4.9 U
SEMIVOLATILES (UG/KG)									
1,1-BIPHENYL	3900000	51000000	330 U	470 UJ	410 U	390 U	410 U	400 U	405 UJ
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 UJ	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4.05 U
1,4-DIOXANE	44000	160000	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4.05 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 UJ
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	4.7 UJ	4.1 U	3.9 U	4.1 UJ	4 UJ	4.05 UJ
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	950 UJ	830 U	785 U	830 U	800 U	820 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	4.7 UJ	4.1 U	3.9 U	4.1 UJ	4 UJ	4.05 UJ
2,4-DIMETHYLPHENOL	1200000	12000000	330 UJ	470 UJ	4.1 UJ	3.9 UJ	4.1 UJ	4 UJ	405 UJ
2,4-DINITROPHENOL	120000	1200000	670 UJ	950 UJ	830 UJ	785 UJ	830 UJ	800 UJ	820 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	470 UJ	410 U	390 U	410 U	400 U	405 U
2,6-DINITROTOLUENE	61000	620000	330 U	470 UJ	410 U	390 U	410 U	400 U	405 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	470 UJ	410 U	390 U	410 U	400 U	405 U
2-CHLOROPHENOL	390000	5100000	4.8	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4.05 U
2-METHYLNAPHTHALENE	310000	4100000	13 J	4.7 U	4.1 UJ	5.75 J	4.1 U	4 U	4.05 U
2-METHYLPHENOL	3100000	31000000	3.3 UJ	470 UJ	4.1 U	3.9 U	4.1 U	4 U	405 U
2-NITROANILINE	610000	6000000	670 U	950 UJ	830 U	785 U	830 U	800 U	820 U
2-NITROPHENOL			330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
LOCATION ID			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
3,3'-DICHLOROBENZIDINE			1100	3800	330 U	470 UJ	410 U	390 U	410 U
3-NITROANILINE			670 U	950 UJ	830 U	785 U	830 U	800 U	820 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	950 UJ	830 UJ	785 UJ	830 U	800 U	820 U
4-BROMOPHENYL PHENYL ETHER			330 U	470 UJ	410 U	390 U	410 U	400 U	405 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	4.7 UJ	4.1 U	3.9 U	4.1 UJ	4 UJ	4.05 UJ
4-CHLOROANILINE	2400	8600	330 UJ	470 UJ	410 UJ	390 UJ	410 UJ	400 UJ	405 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	470 UJ	410 U	390 U	410 U	400 U	405 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	4.7 UJ	4.1 U	3.9 U	4.1 U	4 U	4.05 UJ
4-NITROANILINE	24000	86000	670 U	950 UJ	830 U	785 U	830 U	800 U	820 U
4-NITROPHENOL			670 UJ	950 UJ	830 U	785 UJ	830 U	800 U	820 U
ACENAPHTHENE	3400000	33000000	3.3 U	4.7 U	4.5	3.9 U	4.1 U	4 U	4.05 U
ACENAPHTHYLENE	3400000	33000000	3.3 U	4.7 U	13	3.9 U	4.1 U	4 U	4.05 U
ACETOPHENONE	7800000	100000000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 UJ
ANTHRACENE	17000000	170000000	3.3 U	4.7 U	24	3.9 U	4.1 U	4 U	4.05 U
ATRAZINE	2100	7500	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4.05 U
BENZALDEHYDE	7800000	100000000	330 UJ	470 UJ	410 UJ	390 UJ	410 UJ	400 UJ	405 UJ
BENZO(A)ANTHRACENE	150	2100	3.9	10	64 J	3.9 U	4.1 U	4 U	3.95
BENZO(A)PYRENE	15	210	3.3 U	9.3 J	65 J	3.9 UJ	4.1 U	4 U	3.3 J
BENZO(B)FLUORANTHENE	150	2100	3.3 U	13 J	120 J	3.9 UJ	4.1 UJ	4 UJ	7.5 J
BENZO(G,H,I)PERYLENE	1700000	17000000	3.3 U	8	44	3.9 U	4.1 U	4 U	5.1
BENZO(K)FLUORANTHENE	1500	21000	3.3 U	10	27 J	3.9 U	4.1 U	4 U	5.25
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	59 J	410 U	390 U	75 J	400 U	405 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
LOCATION ID									
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BUTYL BENZYL PHTHALATE	260000	910000	330 U	470 UJ	410 U	390 U	410 U	59 J	405 U
CAPROLACTAM	31000000	310000000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U
CARBAZOLE			330 U	470 UJ	410 U	390 U	410 U	400 U	405 U
CHRYSENE	15000	210000	4.3	11	79 J	3.9 U	4.1 U	4 U	4.7
DIBENZO(A,H)ANTHRACENE	15	210	3.3 U	4.7 UJ	12 J	3.9 UJ	4.1 U	4 U	4.05 UJ
DIBENZOFURAN	78000	1000000	330 U	470 UJ	410 U	390 U	410 U	400 U	405 U
DIETHYL PHTHALATE	49000000	490000000	330 U	470 UJ	410 U	390 U	410 U	400 U	405 U
DIMETHYL PHTHALATE			330 U	470 UJ	410 U	390 U	410 U	400 U	405 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	470 UJ	410 U	390 U	52 J	400 U	405 U
DI-N-OCTYL PHTHALATE			330 UJ	470 UJ	410 U	390 U	410 UJ	400 UJ	405 U
FLUORANTHENE	2300000	22000000	4.4	14	140 J	3.9 U	4.1 U	4 U	7.8
FLUORENE	2300000	22000000	3.3 U	4.7 U	9.3	3.9 U	4.1 U	4 U	4.05 U
HEXACHLOROENZENE	300	1100	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4.05 U
HEXACHLOROBUTADIENE	6200	22000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	470 UJ	410 UJ	390 UJ	410 UJ	400 UJ	405 UJ
HEXACHLOROETHANE	35000	120000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U
HIGH MOLECULAR WEIGHT PAHS			17.5 J	95.1 J	707 J	3.9 UJ	4.1 UJ	4 UJ	44.2 J
INDENO(1,2,3-CD)PYRENE	150	2100	3.3 U	6.8 J	36 J	3.9 UJ	4.1 UJ	4 UJ	3.3 J
ISOPHORONE	510000	1800000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U
LOW MOLECULAR WEIGHT PAHS			26.4 J	5.7	126 J	11.8 J	4.1 U	4 U	4.05 U
NAPHTHALENE	3600	18000	6.5	4.7 U	4.3	6.95 J	4.1 U	4 U	4.05 U
NITROBENZENE	4800	24000	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 UJ
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	470 UJ	410 U	390 U	410 U	400 U	405 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

**TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
LOCATION ID			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
PENTACHLOROPHENOL	3000	9000	670 UJ	47 U	41 U	40 U	41 U	40 U	40.5 U
PHENANTHRENE	1700000	17000000	6.9 J	5.7	71 J	3.9 U	4.1 U	4 U	4.05 U
PHENOL	18000000	180000000	30	4.7 U	4.1 U	3.9 U	6.4	4 U	4.05 U
PYRENE	1700000	17000000	4.9 J	13	120 J	3.9 U	4.1 U	4 U	6.35
TOTAL CARCINOGENIC PAHS-HALFND	15	210	16.4	62.4 J	403 J	3.9 UJ	4.1 UJ	4 UJ	30 J
TOTAL CARCINOGENIC PAHS-POS	15	210	8.2	60.1 J	403 J	3.9 UJ	4.1 UJ	4 UJ	25 J
TOTAL CHLORINATED VOCS			330 UJ	470 UJ	410 U	390 U	410 U	400 U	405 U
TOTAL PAHS			43.9 J	101 J	833 J	11.8 J	4.1 UJ	4 UJ	44.2 J
PESTICIDES/PCBS (UG/KG)									
4,4'-DDD	2000	7200	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4 U
4,4'-DDE	1400	5100	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4 U
4,4'-DDT	1700	7000	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4 U
ALDRIN	29	100	1.7 U	2.4 U	2.1 U	2 U	2.1 U	2.1 U	2.05 U
ALPHA-BHC	77	270	1.7 U	2.4 U	2.1 U	2 U	2.1 U	2.1 U	2.05 U
ALPHA-CHLORDANE	1600	6500	1.7 UJ	2.4 U	2.1 UJ	2 U	2.1 U	2.1 U	2.05 U
AROCLOR-1016	3900	21000	33 U	47 U	41 U	39 U	41 U	40 U	40 U
AROCLOR-1221	140	540	33 U	47 U	41 U	39 U	41 U	40 U	40 U
AROCLOR-1232	140	540	33 U	47 U	41 U	39 U	41 U	40 U	40 U
AROCLOR-1242	220	740	33 U	47 U	41 U	39 U	41 U	40 U	40 U
AROCLOR-1248	220	740	33 U	47 U	41 U	39 U	41 U	40 U	40 U
AROCLOR-1254	220	740	33 U	47 U	41 U	39 U	41 U	40 U	40 U
AROCLOR-1260	220	740	33 U	47 U	41 U	39 U	41 U	40 U	40 U
AROCLOR-1262			33 U	47 U	41 U	39 U	41 U	40 U	40 U
AROCLOR-1268			33 U	47 U	41 U	39 U	41 U	40 U	40 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
LOCATION ID			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BETA-BHC	270	960	1.7 U	2.4 U	2.1 U	2 U	2.1 U	2.1 U	2.05 U
DELTA-BHC	77	270	1.7 U	2.4 U	2.1 U	2 U	2.1 U	2.1 U	2.05 U
DIELDRIN	30	110	3.3 U	4.7 U	4.1 UJ	3.9 U	4.1 U	4 U	4 U
ENDOSULFAN I	370000	3700000	1.7 U	2.4 U	2.1 U	2 U	2.1 U	2.1 U	2.05 U
ENDOSULFAN II	370000	3700000	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4 U
ENDRIN	18000	180000	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	5.7	4 U
ENDRIN KETONE	18000	180000	3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4 U
GAMMA-BHC (LINDANE)	520	2100	1.7 U	2.4 U	2.1 U	2 U	2.1 U	2.1 U	2.05 U
GAMMA-CHLORDANE	1600	6500	1.7 UJ	2.4 U	2.1 UJ	2 U	2.1 U	2.1 U	2.05 U
HEPTACHLOR	110	380	1.7 U	2.4 U	2.1 U	2 U	2.1 U	2.1 U	2.05 U
HEPTACHLOR EPOXIDE	53	190	1.7 U	2.4 U	2.1 UJ	2 U	2.1 U	2.1 U	2.05 U
METHOXYCHLOR	310000	3100000	17 UJ	24 U	21 U	20 U	21 U	21 U	20.5 U
TOTAL AROCLOR	220	740	33 U	47 U	41 U	39 U	41 U	40 U	40 U
TOTAL CHLORDANE			1.7 UJ	2.4 U	2.1 UJ	2 U	2.1 U	2.1 U	2.05 U
TOTAL DDD/DDE/DDT			3.3 U	4.7 U	4.1 U	3.9 U	4.1 U	4 U	4 U
TOXAPHENE	440	1600	170 U	240 U	210 U	200 U	210 U	210 U	205 U
METALS (MG/KG)									
ALUMINUM	77000	990000	10400	12900	7770	3020	14700 J	4240 J	7040
ANTIMONY	31	410	0.11 UJ	0.22 UJ	0.15 UJ	0.14 UJ	0.17 UJ	0.14 UJ	0.145 UJ
ARSENIC	0.39	1.6	6.5 J	18.9 J	13.5 J	9.25 J	10.6 J	16.5 J	11.1 J
BARIUM	15000	190000	30	67.9	20.3 J	5.7 J	51.4	15.2 J	10.1 J
BERYLLIUM	160	2000	0.43	0.34 J	0.34	0.28	0.4	0.3	0.21 J
CADMIUM	70	800	0.16	0.075 J	0.49	0.56	0.34	0.82	0.042 J
CALCIUM			280 J	8.1 UJ	5.5 UJ	82.6 J	1750 J	5.2 UJ	5.25 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
LOCATION ID			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
CHROMIUM	0.29	5.6	11.9 J	12.6	13.2 J	7.5 J	10.9	9.1	11
COBALT	23	300	13.1 J	27.8	31.1 J	41 J	31.3	30.9	8.25
COPPER	3100	41000	6.1 J	21.4	25.1 J	23.7 J	3.3	28.1	10.7
IRON	55000	720000	25000	51500	50700	57300	38500	76900	27600
LEAD	400	800	8.1 J	20.9 J	14.1 J	10.4 J	18.4 J	10.3 J	8 J
MAGNESIUM			1750	2620	2210	972	5120	2220	2190
MANGANESE	1800	23000	471 J	1020	914 J	2740 J	3420	694	156
MERCURY	5.6	34	0.028 J	0.16	0.023 J	0.00595 U	0.017 J	0.0061 U	0.0475
NICKEL	1500	20000	26.4	28 J	50.3	73	56.4 J	87.9 J	17.9 J
POTASSIUM			259 J	376 J	333 J	142 J	934	422	128 J
SELENIUM	390	5100	0.72 J	2.1	0.65 U	0.62 J	3.4	0.61 U	0.625 U
SILVER	390	5100	0.048 U	0.096 U	0.066 U	0.0615 U	0.075 UJ	0.062 UJ	0.063 U
SODIUM			46.9	349 J	25.2 J	18.7 J	68.8	22.8 J	18.4 J
THALLIUM			0.15 U	0.29 U	0.2 U	0.19 U	0.23 U	0.19 U	0.19 U
VANADIUM	390	5200	18.3	23	18.1	15.1	24.6	16.9	13.4
ZINC	23000	310000	47.6	76.6 J	106	138	78.3 J	187 J	57.4 J
MISCELLANEOUS PARAMETERS (S.U.)									
PH			NA	6	NA	6	NA	5.9	NA
MISCELLANEOUS PARAMETERS (MG/KG)									
TOTAL ORGANIC CARBON			NA	5800	NA	12200	NA	6800	NA
DIOXINS/FURANS (NG/KG)									
1,2,3,4,6,7,8,9-OCDD	15000	60000	4480 J	19100 J	3220 J	NA	368	NA	773
1,2,3,4,6,7,8,9-OCDF	15000	60000	0.136 U	0.695 J	2.47 J	NA	0.267 J	NA	0.155 J
1,2,3,4,6,7,8-HPCDD	450	1800	38.7	292	31.5	NA	8.15	NA	12.2

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
LOCATION ID			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
1,2,3,4,6,7,8-HPCDF			450	1800	0.175 J	0.385 J	1.02 J	NA	0.289 J
1,2,3,4,7,8,9-HPCDF	450	1800	0.122 U	0.0933 U	0.0771 U	NA	0.0532 U	NA	0.0732 U
1,2,3,4,7,8-HXCDD	45	180	0.212 J	0.883 J	0.244 J	NA	0.197 J	NA	0.0692 J
1,2,3,4,7,8-HXCDF	45	180	0.0775 U	0.0696 U	0.217 J	NA	0.191 J	NA	0.0361 U
1,2,3,6,7,8-HXCDD	45	180	0.82 J	2.1 J	0.394 J	NA	0.246 J	NA	0.214 J
1,2,3,6,7,8-HXCDF	45	180	0.733 U	0.0658 U	0.129 J	NA	0.148 J	NA	0.0342 U
1,2,3,7,8,9-HXCDD	45	180	0.84 J	4.24	0.519 J	NA	0.275 J	NA	0.209 J
1,2,3,7,8,9-HXCDF	45	180	0.0985 U	0.0884 U	0.0789 J	NA	0.0994 J	NA	0.0456 U
1,2,3,7,8-PECDD	4.5	18	0.140 U	0.224 J	0.0351 U	NA	0.0483 U	NA	0.0564 U
1,2,3,7,8-PECDF	150	600	0.109 U	0.112 U	0.0234 U	NA	0.135 J	NA	0.0583 U
2,3,4,6,7,8-HXCDF	45	180	0.0841 U	0.0755 U	0.099 J	NA	0.11 J	NA	0.039 U
2,3,4,7,8-PECDF	15	60	0.108 U	0.111 U	0.0228 U	NA	0.0330 U	NA	0.0578 U
2,3,7,8-TCDD	4.5	18	0.266 U	0.136 U	0.0483 U	NA	0.0495 U	NA	0.094 U
2,3,7,8-TCDF	45	180	0.248 U	0.143 U	0.0704 U	NA	0.0619 U	NA	0.0953 U
TEQ BIRD	4.5	18	0.591 J	2.92 J	0.484 J	NA	0.156 J	NA	0.116 J
TEQ BIRD HALFND	4.5	18	1.03 J	3.14 J	0.574 J	NA	0.253 J	NA	0.28 J
TEQ FISH	4.5	18	0.611 J	2.93 J	0.547 J	NA	0.213 J	NA	0.119 J
TEQ FISH HALFND	4.5	18	0.9 J	3.05 J	0.598 J	NA	0.272 J	NA	0.231 J
TEQ MAMMAL	4.5	18	1.92 J	9.6 J	1.46 J	NA	0.326 J	NA	0.402 J
TEQ MAMMAL HALFND	4.5	18	2.2 J	9.71 J	1.51 J	NA	0.383 J	NA	0.502 J
TOTAL HPCDD			81.5	705	75.9	NA	17.4	NA	21.9
TOTAL HPCDF			0.175 J	0.385 J	2.59 J	NA	0.289 J	NA	0.053 U
TOTAL HXCDD			9.73	199	6.97	NA	1.91 J	NA	1.66 J
TOTAL HXCDF			0.0733 U	0.334 J	1.23 J	NA	0.339 J	NA	0.0342 U
TOTAL PECDD			0.140 U	60	0.689 J	NA	0.238 J	NA	0.124 J
TOTAL PECDF			0.108 U	0.946 J	1.11 J	NA	0.135 J	NA	0.0578 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-923-0406	TF4-SB-924-0204	TF4-SB-924-0810-AVG	TF4-SB-925-0204	TF4-SB-925-0608	TF4-SB-926-0204-AVG
LOCATION ID			TF4-SB920	TF4-SB923	TF4-SB924	TF4-SB924	TF4-SB925	TF4-SB925	TF4-SB926
SAMPLE DATE			04/22/10	04/19/10	04/20/10	04/20/10	04/23/10	04/23/10	04/19/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL	AVG
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL TCDD					0.266 U	75.6	0.0483 U	NA	0.606 J
TOTAL TCDF			0.248 U	0.143 U	1.12 J	NA	0.701 J	NA	0.3 J
PETROLEUM HYDROCARBONS (MG/KG)									
EXTRACTABLE PETROLEUM HYDROCARBONS			66 J	18	93	18.5 U	19 J	15 U	24.5

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
VOLATILES (UG/KG)									
1,1,1-TRICHLOROETHANE	8700000	38000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,1,2,2-TETRACHLOROETHANE	560	2800	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,1,2-TRICHLOROETHANE	1100	5300	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,1-DICHLOROETHANE	3300	17000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,1-DICHLOROETHENE	240000	1100000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 UJ	4 UJ	5.1 UJ
1,2,3-TRICHLOROBENZENE	49000	490000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,2,4-TRICHLOROBENZENE	22000	99000	4.2 UJ	5.8 UJ	5.1 UJ	4.4 UJ	4.35 UJ	4 UJ	5.1 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 UJ	4 UJ	5.1 UJ
1,2-DIBROMOETHANE	34	170	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,2-DICHLOROBENZENE	1900000	9800000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,2-DICHLOROETHANE	430	2200	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,2-DICHLOROPROPANE	890	4500	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,3-DICHLOROBENZENE			4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
1,4-DICHLOROBENZENE	2400	12000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
2-BUTANONE	28000000	200000000	4.2 UJ	7.5	5.1 U	4.4 U	4.35 U	4 U	5.1 U
2-HEXANONE	210000	1400000	4.2 UJ	5.8 UJ	5.1 UJ	4.4 UJ	4.35 UJ	4 UJ	5.1 UJ
4-METHYL-2-PENTANONE	5300000	53000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
ACETONE	61000000	630000000	4.2 UJ	23 J	140 J	96 J	4.35 UJ	4 UJ	5.1 UJ
BENZENE	1100	5400	4.2 UJ	5.8 U	5.1 U	0.97 J	4.35 U	4 U	5.1 U
BROMOCHLOROMETHANE			4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
BROMODICHLOROMETHANE	270	1400	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
BROMOFORM	61000	220000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
BROMOMETHANE	7300	32000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BTEX			4.2 UJ	5.8 U	5.1 U	0.97 J	4.35 U	4 U	5.1 U
CARBON DISULFIDE	820000	3700000	4.2 UJ	3.2 J	5.1 U	4.4 U	4.35 U	4 U	5.1 U
CARBON TETRACHLORIDE	610	3000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
CHLOROENZENE	290000	1400000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
CHLORODIBROMOMETHANE	680	3300	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
CHLOROETHANE	15000000	61000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
CHLOROFORM	290	1500	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
CHLOROMETHANE	120000	500000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
CIS-1,2-DICHLOROETHENE	780000	10000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
CIS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
CYCLOHEXANE	7000000	29000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
DICHLORODIFLUOROMETHANE	180000	780000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 UJ	4 UJ	5.1 UJ
ETHYLBENZENE	5400	27000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
ISOPROPYLBENZENE	2100000	11000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
M+P-XYLENES			4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
METHYL ACETATE	78000000	1E+09	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
METHYL CYCLOHEXANE			4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
METHYL TERT-BUTYL ETHER	43000	220000	4.2 UJ	5.8 U	5.1 U	1.2 J	4.35 U	4 U	5.1 U
METHYLENE CHLORIDE	11000	53000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
O-XYLENE	3800000	19000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
STYRENE	6300000	36000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
TETRACHLOROETHENE	550	2600	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
TOLUENE	5000000	45000000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
TOTAL CHLORINATED ETHENES			4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 UJ	4 UJ	5.1 UJ
TOTAL CHLORINATED VOCS			4.2 UJ	5.8 UJ	5.1 UJ	4.4 UJ	4.35 UJ	4 UJ	5.1 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL XYLENES	630000	2700000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
TRANS-1,2-DICHLOROETHENE	150000	690000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
TRICHLOROETHENE	2800	14000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
TRICHLOROFUOROMETHANE	790000	3400000	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
VINYL CHLORIDE	60	1700	4.2 UJ	5.8 U	5.1 U	4.4 U	4.35 U	4 U	5.1 U
SEMIVOLATILES (UG/KG)									
1,1-BIPHENYL	3900000	5100000	330 U	390 UJ	410 U	380 U	380 U	380 U	480 U
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 UJ	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.8 U
1,4-DIOXANE	44000	160000	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.8 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	390 UJ	410 U	380 U	380 U	380 U	480 U
2,3,4,6-TETRACHLOROPHENOL	1800000	1800000	3.3 U	3.9 UJ	4.1 U	3.8 U	3.8 UJ	3.8 UJ	4.8 UJ
2,4,5-TRICHLOROPHENOL	6100000	6200000	670 U	800 U	820 U	770 U	770 U	780 U	980 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 UJ	390 U	410 U	380 U	380 U	380 U	480 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	3.9 UJ	4.1 U	3.8 U	3.8 UJ	3.8 UJ	4.8 UJ
2,4-DIMETHYLPHENOL	1200000	1200000	330 UJ	390 UJ	410 UJ	380 UJ	3.8 UJ	3.8 UJ	4.8 UJ
2,4-DINITROPHENOL	120000	1200000	670 UJ	800 UJ	820 UJ	770 UJ	770 UJ	780 UJ	980 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	390 U	410 U	380 U	380 U	380 U	480 U
2,6-DINITROTOLUENE	61000	620000	330 U	390 U	410 U	380 U	380 U	380 U	480 U
2-CHLORONAPHTHALENE	6300000	8200000	330 U	390 U	410 U	380 U	380 U	380 U	480 U
2-CHLOROPHENOL	390000	5100000	4.8	3.9 U	4.1 U	3.8 U	4	3.8 U	4.8 U
2-METHYLNAPHTHALENE	310000	4100000	13 J	6.9	4.1 UJ	3.8 UJ	3.8 U	3.8 U	5.7
2-METHYLPHENOL	3100000	3100000	3.3 UJ	390 U	410 U	380 U	3.8 U	3.8 U	4.8 U
2-NITROANILINE	610000	6000000	670 U	800 U	820 U	770 U	770 U	780 U	980 U
2-NITROPHENOL			330 UJ	390 U	410 U	380 U	380 U	380 U	480 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
3,3'-DICHLOROBENZIDINE			1100	3800	330 U	390 U	410 U	380 U	380 UJ
3-NITROANILINE			670 U	800 U	820 U	770 U	770 U	780 U	980 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	800 U	820 UJ	770 UJ	770 U	780 U	980 U
4-BROMOPHENYL PHENYL ETHER			330 U	390 U	410 U	380 U	380 U	380 U	480 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	3.9 UJ	4.1 U	3.8 U	3.8 UJ	3.8 UJ	4.8 UJ
4-CHLOROANILINE	2400	8600	330 UJ	390 UJ	410 UJ	380 U	380 UJ	380 UJ	480 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	390 U	410 U	380 U	380 U	380 U	480 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	3.9 UJ	4.1 UJ	3.8 UJ	3.8 U	3.8 U	4.8 U
4-NITROANILINE	24000	86000	670 U	800 U	820 U	770 U	770 U	780 U	980 U
4-NITROPHENOL			670 UJ	800 U	820 UJ	770 UJ	770 U	780 U	980 U
ACENAPHTHENE	3400000	33000000	3.3 U	4.5	4.1 U	3.8 U	3.8 U	3.8 U	4.8 U
ACENAPHTHYLENE	3400000	33000000	3.3 U	3.9 U	12	3.8 U	3.8 U	3.8 U	4.8 U
ACETOPHENONE	7800000	100000000	330 UJ	390 UJ	410 U	380 U	380 U	380 U	480 U
ANTHRACENE	17000000	170000000	3.3 U	4.7	24	3.8 U	4.55	3.8 U	4.8 U
ATRAZINE	2100	7500	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.8 U
BENZALDEHYDE	7800000	100000000	330 UJ	390 UJ	410 UJ	380 UJ	380 UJ	380 UJ	480 UJ
BENZO(A)ANTHRACENE	150	2100	3.9	8.6	57	3.8 U	10.4	3.8 U	6.5
BENZO(A)PYRENE	15	210	3.3 U	8.4 J	56	3.8 U	11.5 J	3.8 U	8.3 J
BENZO(B)FLUORANTHENE	150	2100	3.3 U	17 J	93 J	3.8 U	34 J	3.8 UJ	14 J
BENZO(G,H,I)PERYLENE	1700000	17000000	3.3 U	6.3	46	3.8 U	5.75	3.8 U	7.6
BENZO(K)FLUORANTHENE	1500	21000	3.3 U	3.9 U	62 J	3.8 UJ	18.5	3.8 U	9.6
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 UJ	390 U	410 U	380 U	380 U	380 U	480 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	390 U	410 U	380 U	380 U	380 U	480 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	100 J	410 U	380 U	380 U	380 U	480 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BUTYL BENZYL PHTHALATE			260000	910000	330 U	390 U	410 U	380 U	380 U
CAPROLACTAM	31000000	310000000	330 UJ	390 U	410 U	380 U	380 U	380 U	480 U
CARBAZOLE			330 U	390 U	410 U	380 U	380 U	380 U	480 U
CHRYSENE	15000	210000	4.3	9.9	62	3.8 U	21	3.8 U	13
DIBENZO(A,H)ANTHRACENE	15	210	3.3 U	3.9 UJ	13 J	3.8 UJ	3.8 U	3.8 U	4.8 U
DIBENZOFURAN	78000	1000000	330 U	390 U	410 U	380 U	380 U	380 U	480 U
DIETHYL PHTHALATE	49000000	490000000	330 U	390 U	410 U	380 U	380 U	380 U	480 U
DIMETHYL PHTHALATE			330 U	390 U	410 U	380 U	380 U	380 U	480 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	390 U	410 U	380 U	120 J	380 U	480 U
DI-N-OCTYL PHTHALATE			330 UJ	390 U	410 U	380 U	380 U	380 U	480 UJ
FLUORANTHENE	2300000	22000000	4.4	17	100	3.8 U	11.5	3.8 U	17
FLUORENE	2300000	22000000	3.3 U	4.3	8.4	3.8 U	3.8 U	3.8 U	4.8 U
HEXACHLOROENZENE	300	1100	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.8 U
HEXACHLOROBUTADIENE	6200	22000	330 UJ	390 U	410 U	380 U	380 U	380 U	480 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	390 UJ	410 UJ	380 UJ	380 UJ	380 UJ	480 UJ
HEXACHLOROETHANE	35000	120000	330 UJ	390 U	410 U	380 U	380 U	380 U	480 U
HIGH MOLECULAR WEIGHT PAHS			17.5 J	90 J	613 J	3.8 UJ	130 J	3.8 UJ	97.7 J
INDENO(1,2,3-CD)PYRENE	150	2100	3.3 U	5.8 J	38 J	3.8 UJ	7.1 J	3.8 UJ	6.7 J
ISOPHORONE	510000	1800000	330 UJ	390 U	410 U	380 U	380 U	380 U	480 U
LOW MOLECULAR WEIGHT PAHS			26.4 J	32.4	87.4 J	3.8 UJ	4.55	3.8 U	22.1
NAPHTHALENE	3600	18000	6.5	18 U	4.1 U	3.8 U	3.8 U	3.8 U	8.4
NITROBENZENE	4800	24000	330 UJ	390 UJ	410 U	380 U	380 U	380 U	480 U
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	390 U	410 U	380 U	380 U	380 U	480 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	390 U	410 U	380 U	380 U	380 U	480 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
PENTACHLOROPHENOL	3000	9000	670 UJ	39 U	41 UJ	38 UJ	38 U	38 U	48 U
PHENANTHRENE	1700000	17000000	6.9 J	12	43	3.8 U	3.8 U	3.8 U	8
PHENOL	18000000	180000000	30	3.9 U	7.3	3.8 U	3.8 U	3.8 U	5.8
PYRENE	1700000	17000000	4.9 J	17	86	3.8 U	11	3.8 U	15
TOTAL CARCINOGENIC PAHS-HALFND	15	210	16.4	53.6 J	381 J	3.8 UJ	105 J	3.8 UJ	60.5 J
TOTAL CARCINOGENIC PAHS-POS	15	210	8.2	49.7 J	381 J	3.8 UJ	103 J	3.8 UJ	58.1 J
TOTAL CHLORINATED VOCS			330 UJ	390 U	410 U	380 U	380 U	380 U	480 U
TOTAL PAHS			43.9 J	122 J	700 J	3.8 UJ	135 J	3.8 UJ	120 J
PESTICIDES/PCBS (UG/KG)									
4,4'-DDD	2000	7200	3.3 U	3.9 U	8.2	3.8 U	3.8 U	3.8 U	4.9 U
4,4'-DDE	1400	5100	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.9 U
4,4'-DDT	1700	7000	3.3 U	3.9 U	4.1 UJ	3.8 UJ	3.8 U	3.8 U	4.9 U
ALDRIN	29	100	1.7 U	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
ALPHA-BHC	77	270	1.7 U	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
ALPHA-CHLORDANE	1600	6500	1.7 UJ	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
AROCLOR-1016	3900	21000	33 U	39 U	41 U	38 U	38 U	38 U	49 U
AROCLOR-1221	140	540	33 U	39 U	41 U	38 U	38 U	38 U	49 U
AROCLOR-1232	140	540	33 U	39 U	41 U	38 U	38 U	38 U	49 U
AROCLOR-1242	220	740	33 U	39 U	41 U	38 U	38 U	38 U	49 U
AROCLOR-1248	220	740	33 U	39 U	41 U	38 U	38 U	38 U	49 U
AROCLOR-1254	220	740	33 U	39 U	41 U	38 U	38 U	38 U	49 U
AROCLOR-1260	220	740	33 U	39 U	41 U	38 U	38 U	38 U	49 U
AROCLOR-1262			33 U	39 U	41 U	38 U	38 U	38 U	49 U
AROCLOR-1268			33 U	39 U	41 U	38 U	38 U	38 U	49 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BETA-BHC	270	960	1.7 U	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
DELTA-BHC	77	270	1.7 U	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
DIELDRIN	30	110	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.9 U
ENDOSULFAN I	370000	3700000	1.7 U	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
ENDOSULFAN II	370000	3700000	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.9 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.9 U
ENDRIN	18000	180000	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.9 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.9 U
ENDRIN KETONE	18000	180000	3.3 U	3.9 U	4.1 U	3.8 U	3.8 U	3.8 U	4.9 U
GAMMA-BHC (LINDANE)	520	2100	1.7 U	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
GAMMA-CHLORDANE	1600	6500	1.7 UJ	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
HEPTACHLOR	110	380	1.7 U	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
HEPTACHLOR EPOXIDE	53	190	1.7 U	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
METHOXYCHLOR	310000	3100000	17 UJ	20 U	21 UJ	19 UJ	19.5 U	20 U	25 U
TOTAL AROCLOR	220	740	33 U	39 U	41 U	38 U	38 U	38 U	49 U
TOTAL CHLORDANE			1.7 UJ	2 U	2.1 U	1.9 U	1.95 U	2 U	2.5 U
TOTAL DDD/DDE/DDT			3.3 U	3.9 U	8.2 J	3.8 UJ	3.8 U	3.8 U	4.9 U
TOXAPHENE	440	1600	170 U	200 U	210 U	190 U	195 U	200 U	250 U
METALS (MG/KG)									
ALUMINUM	77000	990000	10400	8090	8740	697	4660 J	1500 J	12900 J
ANTIMONY	31	410	0.11 UJ	0.21 UJ	0.19 UJ	0.19 UJ	0.15 UJ	0.19 UJ	0.2 UJ
ARSENIC	0.39	1.6	6.5 J	13.4 J	5.3 J	10.9 J	27.8 J	31.5 J	8.3 J
BARIUM	15000	190000	30	9.1 J	24.6	1.8 J	8.65 J	13.3 J	103
BERYLLIUM	160	2000	0.43	0.24 J	0.66 J	0.22 J	0.295	0.34	0.69
CADMIUM	70	800	0.16	0.015 U	0.13 J	0.41	0.375 J	0.59	0.23 J
CALCIUM			280 J	7.6 UJ	704 J	6 UJ	75.8 J	6.9 UJ	583 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
CHROMIUM			0.29	5.6	11.9 J	13.2	12.8	10.2	8.2
COBALT	23	300	13.1 J	10.7	10.7 J	22.9 J	22	30	37.1
COPPER	3100	41000	6.1 J	10.7	12 J	20 J	16.5 J	31.1	3.3
IRON	55000	720000	25000	32700	35000	58400	44800 J	69600	30700
LEAD	400	800	8.1 J	8.4 J	14.2	9.2 J	4.6 J	5.6 J	11.8 J
MAGNESIUM			1750	2810	1840 J	136 J	1410 J	285	2260
MANGANESE	1800	23000	471 J	200	469	502	1440	1010	4480
MERCURY	5.6	34	0.028 J	0.036 J	0.02 UJ	0.0062 U	0.00692 J	0.0066 U	0.021 J
NICKEL	1500	20000	26.4	21.9 J	25.3	44.6	48.4 J	60.2 J	43.6 J
POTASSIUM			259 J	137 J	296 J	89.6 J	226	177	597
SELENIUM	390	5100	0.72 J	0.9 U	2.8 UJ	2.7 UJ	0.902	0.81 U	4.1
SILVER	390	5100	0.048 U	0.091 U	0.13 UJ	0.15 UJ	0.0655 UJ	0.082 UJ	0.088 UJ
SODIUM			46.9	19 J	43.9 J	11.8 UJ	25.7 J	18.4 J	79.3
THALLIUM			0.15 U	0.28 U	0.25 U	0.25 U	0.2 U	0.25 U	0.27 U
VANADIUM	390	5200	18.3	15.1	17.6	9.8 J	14.2	16.1	23.7
ZINC	23000	310000	47.6	67.2 J	66.2	130	75.2 J	107 J	49 J
MISCELLANEOUS PARAMETERS (S.U.)									
PH			NA	6	NA	6	NA	6	NA
MISCELLANEOUS PARAMETERS (MG/KG)									
TOTAL ORGANIC CARBON			NA	7700	NA	5000 U	NA	7300	NA
DIOXINS/FURANS (NG/KG)									
1,2,3,4,6,7,8,9-OCDD	15000	60000	4480 J	NA	4490 J	NA	7780 J	NA	1070
1,2,3,4,6,7,8,9-OCDF	15000	60000	0.136 U	NA	3.95 U	NA	0.524 J	NA	0.491 J
1,2,3,4,6,7,8-HPCDD	450	1800	38.7	NA	42.6	NA	66.6 J	NA	14.8

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
1,2,3,4,6,7,8-HPCDF			450	1800	0.175 J	NA	1.36 U	NA	0.199 J
1,2,3,4,7,8,9-HPCDF	450	1800	0.122 U	NA	0.0328 U	NA	0.0521 U	NA	0.0468 U
1,2,3,4,7,8-HXCDD	45	180	0.212 J	NA	0.303 J	NA	0.253 J	NA	0.215 J
1,2,3,4,7,8-HXCDF	45	180	0.0775 U	NA	0.345 J	NA	0.079 J	NA	0.16 J
1,2,3,6,7,8-HXCDD	45	180	0.82 J	NA	0.514 J	NA	0.309 J	NA	0.313 J
1,2,3,6,7,8-HXCDF	45	180	0.733 U	NA	0.221 J	NA	0.0464 J	NA	0.12 J
1,2,3,7,8,9-HXCDD	45	180	0.84 J	NA	0.514 J	NA	0.365 J	NA	0.477 J
1,2,3,7,8,9-HXCDF	45	180	0.0985 U	NA	0.0491 J	NA	0.042 U	NA	0.0439 U
1,2,3,7,8-PECDD	4.5	18	0.140 U	NA	0.177 J	NA	0.0624 U	NA	0.0718 U
1,2,3,7,8-PECDF	150	600	0.109 U	NA	0.0356 U	NA	0.0454 U	NA	0.0502 U
2,3,4,6,7,8-HXCDF	45	180	0.0841 U	NA	0.179 J	NA	0.036 U	NA	0.107 J
2,3,4,7,8-PECDF	15	60	0.108 U	NA	0.18 J	NA	0.0449 U	NA	0.0496 U
2,3,7,8-TCDD	4.5	18	0.266 U	NA	0.0845 U	NA	0.0612 U	NA	0.0756 J
2,3,7,8-TCDF	45	180	0.248 U	NA	0.343 J	NA	0.0944 U	NA	0.130 U
TEQ BIRD	4.5	18	0.591 J	NA	1.34 J	NA	0.91 J	NA	0.302 J
TEQ BIRD HALFND	4.5	18	1.03 J	NA	1.39 J	NA	1.05 J	NA	0.432 J
TEQ FISH	4.5	18	0.611 J	NA	1.02 J	NA	0.99 J	NA	0.356 J
TEQ FISH HALFND	4.5	18	0.9 J	NA	1.07 J	NA	1.07 J	NA	0.411 J
TEQ MAMMAL	4.5	18	1.92 J	NA	2.25 J	NA	3.1 J	NA	0.688 J
TEQ MAMMAL HALFND	4.5	18	2.2 J	NA	2.3 J	NA	3.18 J	NA	0.741 J
TOTAL HPCDD			81.5	NA	121	NA	112 J	NA	32
TOTAL HPCDF			0.175 J	NA	4.02	NA	0.0776 J	NA	0.708 J
TOTAL HXCDD			9.73	NA	11.2 U	NA	3.08 J	NA	4.1
TOTAL HXCDF			0.0733 U	NA	2.59 J	NA	0.119 J	NA	0.622 J
TOTAL PECDD			0.140 U	NA	1.16 J	NA	0.249 J	NA	0.0718 U
TOTAL PECDF			0.108 U	NA	3.3	NA	0.203 J	NA	1.79 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-926-0406	TF4-SB-928-0204	TF4-SB-928-0810	TF4-SB-929-0204-AVG	TF4-SB-929-0608	TF4-SB-930-0204
LOCATION ID			TF4-SB920	TF4-SB926	TF4-SB928	TF4-SB928	TF4-SB929	TF4-SB929	TF4-SB930
SAMPLE DATE			04/22/10	04/19/10	04/15/10	04/15/10	04/23/10	04/23/10	04/23/10
TOP DEPTH			2 FT	4 FT	2 FT	8 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	6 FT	4 FT	10 FT	4 FT	8 FT	4 FT
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	AVG	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL TCDD					0.266 U	NA	0.376 J	NA	0.0954 J
TOTAL TCDF			0.248 U	NA	3.6	NA	0.432 J	NA	0.998 J
PETROLEUM HYDROCARBONS (MG/KG)									
EXTRACTABLE PETROLEUM HYDROCARBONS			66 J	14 U	240	14 U	14 U	14 U	71 J

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
VOLATILES (UG/KG)									
1,1,1-TRICHLOROETHANE	8700000	38000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,1,2,2-TETRACHLOROETHANE	560	2800	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,1,2-TRICHLOROETHANE	1100	5300	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,1-DICHLOROETHANE	3300	17000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,1-DICHLOROETHENE	240000	1100000	4.2 UJ	4.8 UJ	4 UJ	4.9 UJ	4.7 UJ	4.3 UJ	5 U
1,2,3-TRICHLOROBENZENE	49000	490000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 UR
1,2,4-TRICHLOROBENZENE	22000	99000	4.2 UJ	4.8 UJ	4 UJ	4.9 UJ	4.7 UJ	4.3 UJ	5 UR
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	4.2 UJ	4.8 UJ	4 UJ	4.9 UJ	4.7 UJ	4.3 UJ	5 U
1,2-DIBROMOETHANE	34	170	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,2-DICHLOROBENZENE	1900000	9800000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,2-DICHLOROETHANE	430	2200	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,2-DICHLOROPROPANE	890	4500	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,3-DICHLOROBENZENE			4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
1,4-DICHLOROBENZENE	2400	12000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
2-BUTANONE	28000000	200000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
2-HEXANONE	210000	1400000	4.2 UJ	4.8 UJ	4 UJ	4.9 UJ	4.7 UJ	4.3 UJ	5 UR
4-METHYL-2-PENTANONE	5300000	53000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
ACETONE	61000000	630000000	4.2 UJ	5.1 J	4 UJ	4.9 UJ	4.7 UJ	4.3 UJ	67 J
BENZENE	1100	5400	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
BROMOCHLOROMETHANE			4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
BROMODICHLOROMETHANE	270	1400	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
BROMOFORM	61000	220000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
BROMOMETHANE	7300	32000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
BTEX			4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CARBON DISULFIDE	820000	3700000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CARBON TETRACHLORIDE	610	3000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CHLOROENZENE	290000	1400000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CHLORODIBROMOMETHANE	680	3300	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CHLOROETHANE	15000000	61000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CHLOROFORM	290	1500	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CHLOROMETHANE	120000	500000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CIS-1,2-DICHLOROETHENE	780000	10000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CIS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
CYCLOHEXANE	7000000	29000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
DICHLORODIFLUOROMETHANE	180000	780000	4.2 UJ	4.8 UJ	4 UJ	4.9 UJ	4.7 UJ	4.3 UJ	5 U
ETHYLBENZENE	5400	27000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
ISOPROPYLBENZENE	2100000	11000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
M+P-XYLENES			4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
METHYL ACETATE	78000000	1E+09	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 UR
METHYL CYCLOHEXANE			4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
METHYL TERT-BUTYL ETHER	43000	220000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	1 J
METHYLENE CHLORIDE	11000	53000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
O-XYLENE	3800000	19000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
STYRENE	6300000	36000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
TETRACHLOROETHENE	550	2600	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
TOLUENE	5000000	45000000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
TOTAL CHLORINATED ETHENES			4.2 UJ	4.8 UJ	4 UJ	4.9 UJ	4.7 UJ	4.3 UJ	5 U
TOTAL CHLORINATED VOCS			4.2 UJ	4.8 UJ	4 UJ	4.9 UJ	4.7 UJ	4.3 UJ	5 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
TOTAL XYLENES			630000	2700000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U
TRANS-1,2-DICHLOROETHENE	150000	690000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
TRICHLOROETHENE	2800	14000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
TRICHLOROFUOROMETHANE	790000	3400000	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
VINYL CHLORIDE	60	1700	4.2 UJ	4.8 U	4 U	4.9 U	4.7 U	4.3 U	5 U
SEMIVOLATILES (UG/KG)									
1,1-BIPHENYL	3900000	51000000	330 U	410 U	360 U	390 U	380 U	390 U	400 UJ
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 UJ	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
1,4-DIOXANE	44000	160000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 UJ
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	4.1 UJ	3.6 UJ	3.9 UJ	3.8 UJ	3.9 UJ	4 U
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	830 U	730 U	790 U	780 U	790 U	810 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	4.1 UJ	3.6 UJ	3.9 UJ	3.8 UJ	3.9 UJ	4 U
2,4-DIMETHYLPHENOL	1200000	12000000	330 UJ	4.1 UJ	3.6 UJ	3.9 UJ	3.8 UJ	3.9 UJ	400 U
2,4-DINITROPHENOL	120000	1200000	670 UJ	830 UJ	730 UJ	790 UJ	780 UJ	790 UJ	810 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	410 U	360 U	390 U	380 U	390 U	400 U
2,6-DINITROTOLUENE	61000	620000	330 U	410 U	360 U	390 U	380 U	390 U	400 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	410 U	360 U	390 U	380 U	390 U	400 U
2-CHLOROPHENOL	390000	5100000	4.8	4.1 U	3.6 U	4	3.8 U	3.9 U	4 U
2-METHYLNAPHTHALENE	310000	4100000	13 J	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
2-METHYLPHENOL	3100000	31000000	3.3 UJ	4.1 U	3.6 U	12	3.8 U	3.9 U	4 U
2-NITROANILINE	610000	6000000	670 U	830 U	730 U	790 U	780 U	790 U	810 U
2-NITROPHENOL			330 UJ	410 U	360 U	390 U	380 U	390 U	400 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
3,3'-DICHLOROBENZIDINE			1100	3800	330 U	410 UJ	360 UJ	390 UJ	380 UJ
3-NITROANILINE			670 U	830 U	730 U	790 U	780 U	790 U	810 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	830 U	730 U	790 U	780 U	790 U	810 UJ
4-BROMOPHENYL PHENYL ETHER			330 U	410 U	360 U	390 U	380 U	390 U	400 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	4.1 UJ	3.6 UJ	3.9 UJ	3.8 UJ	3.9 UJ	4 U
4-CHLOROANILINE	2400	8600	330 UJ	410 UJ	360 UJ	390 UJ	380 UJ	390 UJ	400 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	410 U	360 U	390 U	380 U	390 U	400 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
4-NITROANILINE	24000	86000	670 U	830 U	730 U	790 U	780 U	790 U	810 U
4-NITROPHENOL			670 UJ	830 U	730 U	790 U	780 U	790 U	810 U
ACENAPHTHENE	3400000	33000000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
ACENAPHTHYLENE	3400000	33000000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	69
ACETOPHENONE	7800000	100000000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 UJ
ANTHRACENE	17000000	170000000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	99 J
ATRAZINE	2100	7500	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
BENZALDEHYDE	7800000	100000000	330 UJ	410 UJ	360 UJ	390 UJ	380 UJ	390 UJ	400 UJ
BENZO(A)ANTHRACENE	150	2100	3.9	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	320 J
BENZO(A)PYRENE	15	210	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	250 J
BENZO(B)FLUORANTHENE	150	2100	3.3 U	4.1 UJ	3.6 UJ	3.9 UJ	3.8 UJ	3.9 UJ	610 J
BENZO(G,H,I)PERYLENE	1700000	17000000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	100 J
BENZO(K)FLUORANTHENE	1500	21000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	490
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	410 U	360 U	390 U	380 U	390 U	

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
BUTYL BENZYL PHTHALATE			260000	910000	330 U	410 U	360 U	390 U	380 U
CAPROLACTAM	31000000	310000000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
CARBAZOLE			330 U	410 U	360 U	390 U	380 U	390 U	400 U
CHRYSENE	15000	210000	4.3	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	440
DIBENZO(A,H)ANTHRACENE	15	210	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	46
DIBENZOFURAN	78000	1000000	330 U	410 U	360 U	390 U	380 U	390 U	400 U
DIETHYL PHTHALATE	49000000	490000000	330 U	410 U	360 U	390 U	380 U	390 U	400 U
DIMETHYL PHTHALATE			330 U	410 U	360 U	390 U	380 U	390 U	400 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	410 U	50 J	48 J	380 U	390 U	400 U
DI-N-OCTYL PHTHALATE			330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
FLUORANTHENE	2300000	22000000	4.4	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	160 J
FLUORENE	2300000	22000000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	12
HEXACHLOROBENZENE	300	1100	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
HEXACHLOROBUTADIENE	6200	22000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	410 UJ	360 UJ	390 UJ	380 UJ	390 UJ	400 UJ
HEXACHLOROETHANE	35000	120000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
HIGH MOLECULAR WEIGHT PAHS			17.5 J	4.1 UJ	3.6 UJ	3.9 UJ	3.8 UJ	3.9 UJ	2750 J
INDENO(1,2,3-CD)PYRENE	150	2100	3.3 U	4.1 UJ	3.6 UJ	3.9 UJ	3.8 UJ	3.9 UJ	130 J
ISOPHORONE	510000	1800000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
LOW MOLECULAR WEIGHT PAHS			26.4 J	4.1 U	3.6 U	5.2	3.8 U	3.9 U	200 J
NAPHTHALENE	3600	18000	6.5	4.1 U	3.6 U	5.2	3.8 U	3.9 U	4 U
NITROBENZENE	4800	24000	330 UJ	410 U	360 U	390 U	380 U	390 U	400 UJ
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	410 U	360 U	390 U	380 U	390 U	400 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
PENTACHLOROPHENOL			3000	9000	670 UJ	41 U	36 U	39 U	38 U
PHENANTHRENE	1700000	17000000	6.9 J	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	20
PHENOL	18000000	180000000	30	4.1 U	3.6 U	6.4	3.8 U	3.9 U	4 U
PYRENE	1700000	17000000	4.9 J	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	200 J
TOTAL CARCINOGENIC PAHS-HALFND	15	210	16.4	4.1 UJ	3.6 UJ	3.9 UJ	3.8 UJ	3.9 UJ	2290 J
TOTAL CARCINOGENIC PAHS-POS	15	210	8.2	4.1 UJ	3.6 UJ	3.9 UJ	3.8 UJ	3.9 UJ	2290 J
TOTAL CHLORINATED VOCS			330 UJ	410 U	360 U	390 U	380 U	390 U	400 U
TOTAL PAHS			43.9 J	4.1 UJ	3.6 UJ	5.2 J	3.8 UJ	3.9 UJ	2950 J
PESTICIDES/PCBS (UG/KG)									
4,4'-DDD	2000	7200	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
4,4'-DDE	1400	5100	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
4,4'-DDT	1700	7000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 UJ
ALDRIN	29	100	1.7 U	2.1 U	1.9 U	2 U	2 U	2 U	2.1 U
ALPHA-BHC	77	270	1.7 U	2.1 U	1.9 U	2 U	2 U	2 U	2.1 UJ
ALPHA-CHLORDANE	1600	6500	1.7 UJ	2.1 U	1.9 U	2 U	2 U	2 U	2.1 U
AROCLOR-1016	3900	21000	33 U	41 U	36 U	39 U	38 U	39 U	40 U
AROCLOR-1221	140	540	33 U	41 U	36 U	39 U	38 U	39 U	40 U
AROCLOR-1232	140	540	33 U	41 U	36 U	39 U	38 U	39 U	40 U
AROCLOR-1242	220	740	33 U	41 U	36 U	39 U	38 U	39 U	40 U
AROCLOR-1248	220	740	33 U	41 U	36 U	39 U	38 U	39 U	40 U
AROCLOR-1254	220	740	33 U	41 U	36 U	39 U	38 U	39 U	40 U
AROCLOR-1260	220	740	33 U	41 U	36 U	39 U	38 U	39 U	40 U
AROCLOR-1262			33 U	41 U	36 U	39 U	38 U	39 U	40 U
AROCLOR-1268			33 U	41 U	36 U	39 U	38 U	39 U	40 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
BETA-BHC			270	960	1.7 U	2.1 U	1.9 U	2 U	2 U
DELTA-BHC	77	270	1.7 U	2.1 U	1.9 U	2 U	2 U	2 U	2.1 U
DIELDRIN	30	110	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
ENDOSULFAN I	370000	3700000	1.7 U	2.1 U	1.9 U	2 U	2 U	2 U	2.1 U
ENDOSULFAN II	370000	3700000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
ENDRIN	18000	180000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
ENDRIN KETONE	18000	180000	3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 U
GAMMA-BHC (LINDANE)	520	2100	1.7 U	2.1 U	1.9 U	2 U	2 U	2 U	2.1 UJ
GAMMA-CHLORDANE	1600	6500	1.7 UJ	2.1 U	1.9 U	2 U	2 U	2 U	2.1 UJ
HEPTACHLOR	110	380	1.7 U	2.1 U	1.9 U	2 U	2 U	2 U	2.1 UJ
HEPTACHLOR EPOXIDE	53	190	1.7 U	2.1 U	1.9 U	2 U	2 U	2 U	2.1 UJ
METHOXYCHLOR	310000	3100000	17 UJ	21 U	19 U	20 U	20 U	20 U	21 UJ
TOTAL AROCLOR	220	740	33 U	41 U	36 U	39 U	38 U	39 U	40 U
TOTAL CHLORDANE			1.7 UJ	2.1 U	1.9 U	2 U	2 U	2 U	2.1 UJ
TOTAL DDD/DDE/DDT			3.3 U	4.1 U	3.6 U	3.9 U	3.8 U	3.9 U	4 UJ
TOXAPHENE	440	1600	170 U	210 U	190 U	200 U	200 U	200 U	210 U
METALS (MG/KG)									
ALUMINUM	77000	990000	10400	10600 J	6300 J	3100 J	7420 J	4660 J	8410
ANTIMONY	31	410	0.11 UJ	0.16 UJ	0.13 UJ	0.15 UJ	0.14 UJ	0.18 UJ	0.17 UJ
ARSENIC	0.39	1.6	6.5 J	9 J	24.1 J	42.9 J	4.9 J	34.4 J	6.8 J
BARIUM	15000	190000	30	16.2 J	9.8 J	7.1 J	17.9	17.6 J	20
BERYLLIUM	160	2000	0.43	0.28	0.35	0.24	0.17 J	0.2 J	0.74 J
CADMIUM	70	800	0.16	0.35	0.44	0.34	0.16 J	0.5	0.16 J
CALCIUM			280 J	924 J	74.3 J	321 J	111 J	6.7 UJ	270 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
CHROMIUM	0.29	5.6	11.9 J	23.6	14.3	21.7	9.6	11.4	10.7
COBALT	23	300	13.1 J	20.4	19.5	26.6	5.8	40.2	8.4 J
COPPER	3100	41000	6.1 J	21.2	23.5	31	9.4	17.4	11.6 J
IRON	55000	720000	25000	48300	42800	31300	20300	46300	28600
LEAD	400	800	8.1 J	20.3 J	8.7 J	12 J	8.2 J	6 J	6.3 J
MAGNESIUM			1750	4630	1910	759	1950	1780	1680 J
MANGANESE	1800	23000	471 J	441	303	734	120	1850	306
MERCURY	5.6	34	0.028 J	0.0064 U	0.006 U	0.0062 U	0.0056 U	0.0058 U	0.028 UJ
NICKEL	1500	20000	26.4	51 J	33.3 J	39.8 J	13.4 J	68.2 J	16.4
POTASSIUM			259 J	359	268	148	271	135	234 J
SELENIUM	390	5100	0.72 J	0.68 U	0.58 U	0.92 J	1.4	1.3 J	3.9 UJ
SILVER	390	5100	0.048 U	0.069 UJ	0.059 UJ	0.066 UJ	0.061 UJ	0.08 UJ	0.13 UJ
SODIUM			46.9	21.8 J	17.1 J	17.3 J	25.6 J	26.5 J	43.2 J
THALLIUM			0.15 U	0.21 U	0.18 U	0.2 U	0.18 U	0.24 U	2.3
VANADIUM	390	5200	18.3	19.1	19.6	12	15.1	8.6	16.1
ZINC	23000	310000	47.6	99.6 J	90.3 J	83.2 J	37.1 J	78.4 J	42.3
MISCELLANEOUS PARAMETERS (S.U.)									
PH			NA	6	NA	5.5	NA	5.9	NA
MISCELLANEOUS PARAMETERS (MG/KG)									
TOTAL ORGANIC CARBON			NA	7400	NA	9500	NA	7900	NA
DIOXINS/FURANS (NG/KG)									
1,2,3,4,6,7,8,9-OCDD	15000	60000	4480 J	NA	2160 J	NA	2090 J	NA	4020 J
1,2,3,4,6,7,8,9-OCDF	15000	60000	0.136 U	NA	0.321 J	NA	0.123 J	NA	0.663 U
1,2,3,4,6,7,8-HPCDD	450	1800	38.7	NA	17.1	NA	9.15	NA	24.8

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
1,2,3,4,6,7,8-HPCDF			450	1800	0.175 J	NA	0.129 J	NA	0.068 J
1,2,3,4,7,8,9-HPCDF	450	1800	0.122 U	NA	0.0736 U	NA	0.0416 U	NA	0.148 U
1,2,3,4,7,8-HXCDD	45	180	0.212 J	NA	0.0758 U	NA	0.0428 U	NA	0.295 J
1,2,3,4,7,8-HXCDF	45	180	0.0775 U	NA	0.0923 J	NA	0.0219 U	NA	0.160 U
1,2,3,6,7,8-HXCDD	45	180	0.82 J	NA	0.141 J	NA	0.0376 U	NA	0.499 J
1,2,3,6,7,8-HXCDF	45	180	0.733 U	NA	0.0949 J	NA	0.0208 U	NA	0.152 U
1,2,3,7,8,9-HXCDD	45	180	0.84 J	NA	0.251 J	NA	0.0410 U	NA	0.681 J
1,2,3,7,8,9-HXCDF	45	180	0.0985 U	NA	0.0841 U	NA	0.0272 U	NA	0.204 U
1,2,3,7,8-PECDD	4.5	18	0.140 U	NA	0.0912 U	NA	0.0474 U	NA	0.203 U
1,2,3,7,8-PECDF	150	600	0.109 U	NA	0.0777 U	NA	0.0526 U	NA	0.151 U
2,3,4,6,7,8-HXCDF	45	180	0.0841 U	NA	0.0718 U	NA	0.0234 U	NA	0.174 U
2,3,4,7,8-PECDF	15	60	0.108 U	NA	0.0770 U	NA	0.0520 U	NA	0.149 U
2,3,7,8-TCDD	4.5	18	0.266 U	NA	0.122 U	NA	0.0481 U	NA	0.312 U
2,3,7,8-TCDF	45	180	0.248 U	NA	0.154 U	NA	0.0765 U	NA	0.294 U
TEQ BIRD	4.5	18	0.591 J	NA	0.28 J	NA	0.219 J	NA	0.515 J
TEQ BIRD HALFND	4.5	18	1.03 J	NA	0.516 J	NA	0.342 J	NA	1.04 J
TEQ FISH	4.5	18	0.611 J	NA	0.257 J	NA	0.219 J	NA	0.586 J
TEQ FISH HALFND	4.5	18	0.9 J	NA	0.416 J	NA	0.299 J	NA	0.929 J
TEQ MAMMAL	4.5	18	1.92 J	NA	0.878 J	NA	0.719 J	NA	1.6 J
TEQ MAMMAL HALFND	4.5	18	2.2 J	NA	1.02 J	NA	0.79 J	NA	1.94 J
TOTAL HPCDD			81.5	NA	35.7	NA	17	NA	56.3
TOTAL HPCDF			0.175 J	NA	0.129 J	NA	0.0307 U	NA	0.406 U
TOTAL HXCDD			9.73	NA	1.04 J	NA	0.0376 U	NA	2.49 U
TOTAL HXCDF			0.0733 U	NA	0.0949 J	NA	0.0208 U	NA	0.152 U
TOTAL PECDD			0.140 U	NA	1.71 J	NA	0.0474 U	NA	0.203 U
TOTAL PECDF			0.108 U	NA	0.0770 U	NA	0.0520 U	NA	0.149 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-930-0608	TF4-SB-932-0204	TF4-SB-932-0607	TF4-SB-933-0204	TF4-SB-933-0608	TF4-SB-934-0204
LOCATION ID			TF4-SB920	TF4-SB930	TF4-SB932	TF4-SB932	TF4-SB933	TF4-SB933	TF4-SB934
SAMPLE DATE			04/22/10	04/23/10	04/23/10	04/23/10	04/23/10	04/23/10	04/15/10
TOP DEPTH			2 FT	6 FT	2 FT	6 FT	2 FT	6 FT	2 FT
BOTTOM DEPTH			4 FT	8 FT	4 FT	7 FT	4 FT	8 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
TOTAL TCDD					0.266 U	NA	1.08 J	NA	0.0481 U
TOTAL TCDF			0.248 U	NA	0.154 U	NA	0.0765 U	NA	0.294 U
PETROLEUM HYDROCARBONS (MG/KG)									
EXTRACTABLE PETROLEUM HYDROCARBONS			66 J	15 U	13 U	14 U	14 U	14 U	NA

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
LOCATION ID			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
SAMPLE DATE			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
VOLATILES (UG/KG)									
1,1,1-TRICHLOROETHANE	8700000	38000000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
1,1,2,2-TETRACHLOROETHANE	560	2800	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
1,1,2-TRICHLOROETHANE	1100	5300	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	4.2 UJ	4.3 U	4.1 UJ	4.1 UJ	4.5 U	4.1 UJ	3.6 U
1,1-DICHLOROETHANE	3300	17000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
1,1-DICHLOROETHENE	240000	1100000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 UJ
1,2,3-TRICHLOROBENZENE	49000	490000	4.2 UJ	4.3 U	4.1 UJ	4.1 UJ	4.5 U	4.1 UJ	3.6 U
1,2,4-TRICHLOROBENZENE	22000	99000	4.2 UJ	4.3 UJ	4.1 UJ	4.1 UJ	4.5 UJ	4.1 UJ	3.6 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
1,2-DIBROMOETHANE	34	170	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
1,2-DICHLOROBENZENE	1900000	9800000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
1,2-DICHLOROETHANE	430	2200	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
1,2-DICHLOROPROPANE	890	4500	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
1,3-DICHLOROBENZENE			4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
1,4-DICHLOROBENZENE	2400	12000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
2-BUTANONE	28000000	200000000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 J
2-HEXANONE	210000	1400000	4.2 UJ	4.3 UJ	4.1 U	4.1 U	4.5 UJ	4.1 U	3.6 UJ
4-METHYL-2-PENTANONE	5300000	53000000	4.2 UJ	4.3 U	4.1 UJ	4.1 UJ	4.5 U	4.1 UJ	3.6 U
ACETONE	61000000	630000000	4.2 UJ	4.8 J	9.9 J	6.2 J	4.5 UJ	4.1 UJ	12 J
BENZENE	1100	5400	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
BROMOCHLOROMETHANE			4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
BROMODICHLOROMETHANE	270	1400	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
BROMOFORM	61000	220000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
BROMOMETHANE	7300	32000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
LOCATION ID			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
SAMPLE DATE			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
BTEX					4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U
CARBON DISULFIDE	820000	3700000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
CARBON TETRACHLORIDE	610	3000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
CHLOROENZENE	290000	1400000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
CHLORODIBROMOMETHANE	680	3300	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
CHLOROETHANE	15000000	61000000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
CHLOROFORM	290	1500	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
CHLOROMETHANE	120000	500000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
CIS-1,2-DICHLOROETHENE	780000	10000000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
CIS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
CYCLOHEXANE	7000000	29000000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
DICHLORODIFLUOROMETHANE	180000	780000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 UJ
ETHYLBENZENE	5400	27000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
ISOPROPYLBENZENE	2100000	11000000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
M+P-XYLENES			4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
METHYL ACETATE	78000000	1E+09	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
METHYL CYCLOHEXANE			4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
METHYL TERT-BUTYL ETHER	43000	220000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
METHYLENE CHLORIDE	11000	53000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
O-XYLENE	3800000	19000000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
STYRENE	6300000	36000000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
TETRACHLOROETHENE	550	2600	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 UJ
TOLUENE	5000000	45000000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
TOTAL CHLORINATED ETHENES			4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 UJ
TOTAL CHLORINATED VOCS			4.2 UJ	4.3 UJ	4.1 UJ	4.1 UJ	4.5 UJ	4.1 UJ	3.6 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
LOCATION ID			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
SAMPLE DATE			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
TOTAL XYLENES	630000	2700000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
TRANS-1,2-DICHLOROETHENE	150000	690000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 UJ	3.6 U
TRICHLOROETHENE	2800	14000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
TRICHLOROFUOROMETHANE	790000	3400000	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
VINYL CHLORIDE	60	1700	4.2 UJ	4.3 U	4.1 U	4.1 U	4.5 U	4.1 U	3.6 U
SEMIVOLATILES (UG/KG)									
1,1-BIPHENYL	3900000	51000000	330 U	360 UJ	360 U	370 U	370 UJ	390 UJ	440 U
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 UJ	3.6 U	3.6 UJ	3.7 UJ	3.7 U	3.9 UJ	4.4 U
1,4-DIOXANE	44000	160000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.4 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	360 UJ	360 U	370 U	370 UJ	390 UJ	440 U
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	3.6 U	3.6 UJ	3.7 UJ	3.7 U	3.9 UJ	4.4 UJ
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	730 U	730 U	750 U	750 U	800 UJ	890 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 UJ	360 U	360 U	370 U	370 U	390 U	440 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	5.1 J
2,4-DIMETHYLPHENOL	1200000	12000000	330 UJ	3.6 UJ	3.6 UJ	3.7 UJ	3.7 UJ	3.9 UJ	4.4 UJ
2,4-DINITROPHENOL	120000	1200000	670 UJ	730 UJ	730 UJ	750 UJ	750 UJ	800 UR	890 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	360 U	360 U	370 U	370 U	390 U	440 U
2,6-DINITROTOLUENE	61000	620000	330 U	360 U	360 U	370 U	370 U	390 U	440 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	360 U	360 U	370 U	370 U	390 U	440 U
2-CHLOROPHENOL	390000	5100000	4.8	3.6 U	3.8 U	6.5 U	3.7 U	3.9 U	7.9
2-METHYLNAPHTHALENE	310000	4100000	13 J	3.6 U	3.6 U	3.7 U	3.7 UJ	3.9 U	6.1
2-METHYLPHENOL	3100000	31000000	3.3 UJ	3.6 U	3.6 UJ	3.7 UJ	3.7 U	3.9 UJ	6.4
2-NITROANILINE	610000	6000000	670 U	730 U	730 U	750 U	750 U	800 U	890 U
2-NITROPHENOL			330 UJ	360 U	360 U	370 U	370 U	390 UJ	440 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
LOCATION ID			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
SAMPLE DATE			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
3,3'-DICHLOROBENZIDINE			1100	3800	330 U	360 U	360 U	370 U	370 U
3-NITROANILINE			670 U	730 U	730 U	750 U	750 U	800 U	890 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	730 UJ	730 UJ	750 UJ	750 U	800 UJ	890 U
4-BROMOPHENYL PHENYL ETHER			330 U	360 U	360 U	370 U	370 U	390 U	440 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.4 UJ
4-CHLOROANILINE	2400	8600	330 UJ	360 UJ	360 UJ	370 UJ	370 UJ	390 UJ	440 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	360 U	360 U	370 U	370 U	390 U	440 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	3.6 U	3.6 UJ	3.7 UJ	3.7 U	3.9 UJ	6.1
4-NITROANILINE	24000	86000	670 U	730 U	730 U	750 U	750 U	800 U	890 U
4-NITROPHENOL			670 UJ	730 U	730 U	750 U	750 U	800 U	890 U
ACENAPHTHENE	3400000	33000000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.4 U
ACENAPHTHYLENE	3400000	33000000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.4 U
ACETOPHENONE	7800000	100000000	330 UJ	360 UJ	360 U	370 U	370 UJ	390 UJ	440 U
ANTHRACENE	17000000	170000000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.4 U
ATRAZINE	2100	7500	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.4 U
BENZALDEHYDE	7800000	100000000	330 UJ	360 UJ	360 UJ	370 UJ	370 UJ	390 UJ	440 UJ
BENZO(A)ANTHRACENE	150	2100	3.9	3.6 U	6.5	3.7 U	3.7 U	3.9 U	7
BENZO(A)PYRENE	15	210	3.3 U	3.6 U	5.7	3.7 U	3.7 U	3.9 U	5.7 J
BENZO(B)FLUORANTHENE	150	2100	3.3 U	4.2 J	9.7 J	3.7 UJ	3.7 U	3.9 UJ	9.2 J
BENZO(G,H,I)PERYLENE	1700000	17000000	3.3 U	3.6 U	4.2	3.7 U	3.7 U	3.9 UJ	4.4 U
BENZO(K)FLUORANTHENE	1500	21000	3.3 U	3.6 U	5.8	3.7 U	3.7 UJ	3.9 U	4.8
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 UJ	360 U	360 U	370 U	370 U	390 UJ	440 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	360 U	360 U	370 U	370 U	390 UJ	440 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	360 U	360 U	370 U	370 U	390 U	440 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
LOCATION ID			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
SAMPLE DATE			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
BUTYL BENZYL PHTHALATE			260000	910000	330 U	360 U	360 U	370 U	370 U
CAPROLACTAM	31000000	310000000	330 UJ	360 U	360 U	370 U	370 U	390 U	440 U
CARBAZOLE			330 U	360 U	360 U	370 U	370 U	390 U	440 U
CHRYSENE	15000	210000	4.3	3.6 U	9.6	3.7 U	3.7 U	3.9 U	6.2
DIBENZO(A,H)ANTHRACENE	15	210	3.3 U	3.6 U	3.6 U	3.7 U	3.7 UJ	3.9 UJ	4.4 U
DIBENZOFURAN	78000	1000000	330 U	360 U	360 U	370 U	370 U	390 U	440 U
DIETHYL PHTHALATE	49000000	490000000	330 U	360 U	360 U	370 U	370 U	390 U	440 U
DIMETHYL PHTHALATE			330 U	360 U	360 U	370 U	370 U	390 U	440 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	360 U	360 U	370 U	370 U	390 U	440 U
DI-N-OCTYL PHTHALATE			330 UJ	360 U	360 U	370 U	370 U	390 U	440 UJ
FLUORANTHENE	2300000	22000000	4.4	3.6 U	13	3.9	3.7 U	3.9 U	11
FLUORENE	2300000	22000000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.4 U
HEXACHLOROENZENE	300	1100	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.4 U
HEXACHLOROBUTADIENE	6200	22000	330 UJ	360 U	360 U	370 U	370 U	390 UJ	440 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	360 UJ	360 UJ	370 UJ	370 UJ	390 UJ	440 UJ
HEXACHLOROETHANE	35000	120000	330 UJ	360 U	360 U	370 U	370 U	390 UJ	440 U
HIGH MOLECULAR WEIGHT PAHS			17.5 J	4.2 J	65.5 J	3.9 J	3.7 UJ	3.9 UJ	53.9 J
INDENO(1,2,3-CD)PYRENE	150	2100	3.3 U	3.6 U	3.6 U	3.7 U	3.7 UJ	3.9 UJ	4.4 UJ
ISOPHORONE	510000	1800000	330 UJ	360 U	360 U	370 U	370 U	390 UJ	440 U
LOW MOLECULAR WEIGHT PAHS			26.4 J	3.6 U	4.5	3.7 U	5.3 J	3.9 U	13.4
NAPHTHALENE	3600	18000	6.5	3.6 U	3.6 U	3.7 U	5.3	3.9 U	7.3
NITROBENZENE	4800	24000	330 UJ	360 UJ	360 UJ	370 UJ	370 U	390 UJ	440 U
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	360 U	360 U	370 U	370 U	390 UJ	440 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	360 U	360 U	370 U	370 U	390 U	440 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
LOCATION ID			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
SAMPLE DATE			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
PENTACHLOROPHENOL			3000	9000	670 UJ	730 UJ	36 UJ	37 UJ	750 UJ
PHENANTHRENE	1700000	17000000	6.9 J	3.6 U	4.5	3.7 U	3.7 U	3.9 U	4.4 U
PHENOL	18000000	180000000	30	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	39
PYRENE	1700000	17000000	4.9 J	3.6 U	11	3.7 U	3.7 U	3.9 U	10
TOTAL CARCINOGENIC PAHS-HALFND	15	210	16.4	15 J	40.9 J	3.7 UJ	3.7 UJ	3.9 UJ	37.3 J
TOTAL CARCINOGENIC PAHS-POS	15	210	8.2	4.2 J	37.3 J	3.7 UJ	3.7 UJ	3.9 UJ	32.9 J
TOTAL CHLORINATED VOCS			330 UJ	360 U	360 U	370 U	370 U	390 UJ	440 U
TOTAL PAHS			43.9 J	4.2 J	70 J	3.9 J	5.3 J	3.9 UJ	67.3 J
PESTICIDES/PCBS (UG/KG)									
4,4'-DDD	2000	7200	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.3 U
4,4'-DDE	1400	5100	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.3 U
4,4'-DDT	1700	7000	3.3 U	3.6 UJ	3.6 U	3.7 U	3.7 U	3.9 U	4.3 U
ALDRIN	29	100	1.7 U	1.9 U	1.9 U	1.9 U	1.9 U	2 U	2.2 U
ALPHA-BHC	77	270	1.7 U	1.9 U	1.9 U	1.9 U	1.9 U	2 U	2.2 U
ALPHA-CHLORDANE	1600	6500	1.7 UJ	1.9 UJ	1.9 U	1.9 U	1.9 U	2 U	2.2 U
AROCLOR-1016	3900	21000	33 U	36 U	36 U	37 U	37 U	39 U	43 U
AROCLOR-1221	140	540	33 U	36 U	36 U	37 U	37 U	39 U	43 U
AROCLOR-1232	140	540	33 U	36 U	36 U	37 U	37 U	39 U	43 U
AROCLOR-1242	220	740	33 U	36 U	36 U	37 U	37 U	39 U	43 U
AROCLOR-1248	220	740	33 U	36 U	36 U	37 U	37 U	39 U	43 U
AROCLOR-1254	220	740	33 U	36 U	36 U	37 U	37 U	39 U	43 U
AROCLOR-1260	220	740	33 U	36 U	36 U	37 U	37 U	39 U	43 U
AROCLOR-1262			33 U	36 U	36 U	37 U	37 U	39 U	43 U
AROCLOR-1268			33 U	36 U	36 U	37 U	37 U	39 U	43 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
LOCATION ID			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
SAMPLE DATE			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
BETA-BHC			270	960	1.7 U	1.9 UJ	1.9 U	1.9 U	1.9 U
DELTA-BHC	77	270	1.7 U	1.9 U	1.9 U	1.9 U	1.9 U	2 U	2.2 U
DIELDRIN	30	110	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.3 U
ENDOSULFAN I	370000	3700000	1.7 U	1.9 U	1.9 U	1.9 U	1.9 U	2 U	2.2 U
ENDOSULFAN II	370000	3700000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.3 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.3 U
ENDRIN	18000	180000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 UJ	3.9 U	4.3 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.3 U
ENDRIN KETONE	18000	180000	3.3 U	3.6 U	3.6 U	3.7 U	3.7 U	3.9 U	4.3 U
GAMMA-BHC (LINDANE)	520	2100	1.7 U	1.9 UJ	1.9 U	1.9 U	1.9 U	2 U	2.2 U
GAMMA-CHLORDANE	1600	6500	1.7 UJ	1.9 U	1.9 U	1.9 U	1.9 U	2 U	2.2 U
HEPTACHLOR	110	380	1.7 U	1.9 U	1.9 U	1.9 U	1.9 U	2 U	2.2 U
HEPTACHLOR EPOXIDE	53	190	1.7 U	1.9 U	1.9 U	1.9 U	1.9 U	2 U	2.2 U
METHOXYCHLOR	310000	3100000	17 UJ	19 UJ	19 U	19 U	19 U	20 U	22 U
TOTAL AROCLOR	220	740	33 U	36 U	36 U	37 U	37 U	39 U	43 U
TOTAL CHLORDANE			1.7 UJ	1.9 UJ	1.9 U	1.9 U	1.9 U	2 U	2.2 U
TOTAL DDD/DDE/DDT			3.3 U	3.6 UJ	3.6 U	3.7 U	3.7 U	3.9 U	4.3 U
TOXAPHENE	440	1600	170 U	190 U	190 U	190 U	190 U	200 U	220 U
METALS (MG/KG)									
ALUMINUM	77000	990000	10400	9130	7470 J	7370 J	6340	4110 J	7270 J
ANTIMONY	31	410	0.11 UJ	0.19 UJ	0.18 UJ	0.16 UJ	0.13 UJ	0.19 UJ	0.15 UJ
ARSENIC	0.39	1.6	6.5 J	28.2	9.1	8	10.1 J	7.2	9.4 J
BARIUM	15000	190000	30	6.2 J	19.7	18	19.4	4.7 J	17.4 J
BERYLLIUM	160	2000	0.43	0.44 J	0.53 J	0.43 J	0.53 J	0.24 J	0.25
CADMIUM	70	800	0.16	0.27	0.38	0.33	0.17 J	0.51	0.15 J
CALCIUM			280 J	1260 J	247 J	166 J	137 J	39 J	635 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
			NORMAL						
			NM						
			CHROMIUM	0.29	5.6	11.9 J	24.1	13.5 J	11 J
COBALT	23	300	13.1 J	27.7 J	14.5	10.7	12.7 J	19.7	9.4
COPPER	3100	41000	6.1 J	26.7 J	21	15.7	18 J	24.4	10.4
IRON	55000	720000	25000	61400	39000 J	32300 J	39100	45700 J	22600
LEAD	400	800	8.1 J	3.1 J	6.8 J	5.7 J	6.4 J	4.6 J	11.5 J
MAGNESIUM			1750	3790 J	1980 J	2470 J	1120 J	1430 J	1700
MANGANESE	1800	23000	471 J	573	410	287	402	775	143
MERCURY	5.6	34	0.028 J	0.028 UJ	0.011 J	0.0054 U	0.0062 U	0.0065 U	0.035 J
NICKEL	1500	20000	26.4	42.1	26.4	25	20.5	39.9	17.1 J
POTASSIUM			259 J	114 J	415 J	337 J	247 J	107 J	198
SELENIUM	390	5100	0.72 J	6 UJ	4.7	3.9	3.8 UJ	5.3	0.87 J
SILVER	390	5100	0.048 U	0.2 UJ	0.12 J	0.07 U	0.057 U	0.21 J	0.068 UJ
SODIUM			46.9	16.7 UJ	23.4 J	17.7 J	22.6 UJ	8.4 UJ	41.3 J
THALLIUM			0.15 U	3.8	2.5	1.7	2.6	4.3	0.21 U
VANADIUM	390	5200	18.3	15.6 J	16	10.6 J	16.2	8.9 J	13.6
ZINC	23000	310000	47.6	85.5	83	57.1	58.6	156	40.3 J
MISCELLANEOUS PARAMETERS (S.U.)									
PH			NA	6.1	NA	5.2	NA	6.4	NA
MISCELLANEOUS PARAMETERS (MG/KG)									
TOTAL ORGANIC CARBON			NA	4900 U	NA	21000	NA	23000	NA
DIOXINS/FURANS (NG/KG)									
1,2,3,4,6,7,8,9-OCDD	15000	60000	4480 J	NA	6030 J	NA	6220 J	NA	2280 J
1,2,3,4,6,7,8,9-OCDF	15000	60000	0.136 U	NA	3.33 U	NA	0.457 UJ	NA	0.232 J
1,2,3,4,6,7,8-HPCDD	450	1800	38.7	NA	56.1	NA	59.9	NA	15

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

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ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
LOCATION ID									
SAMPLE DATE			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
1,2,3,4,6,7,8-HPCDF	450	1800	0.175 J	NA	0.818 UJ	NA	0.202 UJ	NA	0.196 J
1,2,3,4,7,8,9-HPCDF	450	1800	0.122 U	NA	0.183 U	NA	0.101 U	NA	0.0542 U
1,2,3,4,7,8-HXCDD	45	180	0.212 J	NA	0.226 J	NA	0.258 J	NA	0.146 J
1,2,3,4,7,8-HXCDF	45	180	0.0775 U	NA	0.0683 U	NA	0.0504 U	NA	0.0592 J
1,2,3,6,7,8-HXCDD	45	180	0.82 J	NA	0.474 J	NA	0.439 J	NA	0.165 J
1,2,3,6,7,8-HXCDF	45	180	0.733 U	NA	0.102 J	NA	0.0907 J	NA	0.0372 U
1,2,3,7,8,9-HXCDD	45	180	0.84 J	NA	0.446 J	NA	0.707 J	NA	0.191 J
1,2,3,7,8,9-HXCDF	45	180	0.0985 U	NA	0.0868 U	NA	0.0641 U	NA	0.0485 U
1,2,3,7,8-PECDD	4.5	18	0.140 U	NA	0.0598 U	NA	0.0857 U	NA	0.0734 U
1,2,3,7,8-PECDF	150	600	0.109 U	NA	0.0516 U	NA	0.0961 U	NA	0.0604 U
2,3,4,6,7,8-HXCDF	45	180	0.0841 U	NA	0.0741 U	NA	0.0547 U	NA	0.0417 U
2,3,4,7,8-PECDF	15	60	0.108 U	NA	0.0512 U	NA	0.0954 U	NA	0.0597 U
2,3,7,8-TCDD	4.5	18	0.266 U	NA	0.0895 U	NA	0.165 U	NA	0.0644 U
2,3,7,8-TCDF	45	180	0.248 U	NA	0.0811 U	NA	0.158 U	NA	0.0998 U
TEQ BIRD	4.5	18	0.591 J	NA	0.73 J	NA	0.779 J	NA	0.279 J
TEQ BIRD HALFND	4.5	18	1.03 J	NA	0.89 J	NA	1.05 J	NA	0.437 J
TEQ FISH	4.5	18	0.611 J	NA	0.792 J	NA	0.831 J	NA	0.327 J
TEQ FISH HALFND	4.5	18	0.9 J	NA	0.899 J	NA	0.997 J	NA	0.422 J
TEQ MAMMAL	4.5	18	1.92 J	NA	2.49 J	NA	2.61 J	NA	0.892 J
TEQ MAMMAL HALFND	4.5	18	2.2 J	NA	2.6 J	NA	2.77 J	NA	0.983 J
TOTAL HPCDD			81.5	NA	119	NA	113	NA	15
TOTAL HPCDF			0.175 J	NA	2.22 J	NA	0.0725 U	NA	0.125 J
TOTAL HXCDD			9.73	NA	4.64 U	NA	3.38 U	NA	1.14 J
TOTAL HXCDF			0.0733 U	NA	0.914 J	NA	0.0477 U	NA	0.0372 U
TOTAL PECDD			0.140 U	NA	0.802 J	NA	0.569 J	NA	0.551 J
TOTAL PECDF			0.108 U	NA	0.614 J	NA	0.0954 U	NA	0.15 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-934-0810	TF4-SB-935-0204	TF4-SB-935-0810	TF4-SB-936-0204	TF4-SB-936-0810	TF4-SB-937-0204
LOCATION ID			TF4-SB920	TF4-SB934	TF4-SB935	TF4-SB935	TF4-SB936	TF4-SB936	TF4-SB937
SAMPLE DATE			04/22/10	04/15/10	04/14/10	04/14/10	04/14/10	04/14/10	04/22/10
TOP DEPTH			2 FT	8 FT	2 FT	8 FT	2 FT	8 FT	2 FT
BOTTOM DEPTH			4 FT	10 FT	4 FT	10 FT	4 FT	10 FT	4 FT
SACODE			NORMAL						
QC TYPE			NM						
TOTAL TCDD					0.266 U	NA	0.0895 U	NA	0.165 U
TOTAL TCDF			0.248 U	NA	0.246 J	NA	0.382 J	NA	0.0998 U
PETROLEUM HYDROCARBONS (MG/KG)									
EXTRACTABLE PETROLEUM HYDROCARBONS			66 J	NA	NA	NA	NA	NA	30 U

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
LOCATION ID			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
VOLATILES (UG/KG)									
1,1,1-TRICHLOROETHANE	8700000	38000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,1,2,2-TETRACHLOROETHANE	560	2800	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,1,2-TRICHLOROETHANE	1100	5300	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,1-DICHLOROETHANE	3300	17000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,1-DICHLOROETHENE	240000	1100000	4.2 UJ	4.1 UJ	3.9 UJ	4.2 U	4.7 U	4 U	3.8 U
1,2,3-TRICHLOROBENZENE	49000	490000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,2,4-TRICHLOROBENZENE	22000	99000	4.2 UJ	4.1 UJ	3.9 UJ	4.2 UJ	4.7 UJ	4 UJ	3.8 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	4.2 UJ	4.1 UJ	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,2-DIBROMOETHANE	34	170	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,2-DICHLOROBENZENE	1900000	9800000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,2-DICHLOROETHANE	430	2200	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,2-DICHLOROPROPANE	890	4500	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,3-DICHLOROBENZENE			4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
1,4-DICHLOROBENZENE	2400	12000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
2-BUTANONE	28000000	200000000	4.2 UJ	4.1 U	3.9 UJ	4.2 U	4.7 U	4 U	6.8
2-HEXANONE	210000	1400000	4.2 UJ	4.1 UJ	3.9 UJ	4.2 UJ	4.7 UJ	4 UJ	3.8 UJ
4-METHYL-2-PENTANONE	5300000	53000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
ACETONE	61000000	630000000	4.2 UJ	4.1 UJ	3.9 UJ	4.2 UJ	4.7 UJ	7.6 J	150 J
BENZENE	1100	5400	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
BROMOCHLOROMETHANE			4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
BROMODICHLOROMETHANE	270	1400	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
BROMOFORM	61000	220000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
BROMOMETHANE	7300	32000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
LOCATION ID									
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BTEX			4.2 UJ	4.1 U	3.9 U	4.2 U	2.7 J	4 U	3.8 U
CARBON DISULFIDE	820000	3700000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
CARBON TETRACHLORIDE	610	3000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
CHLOROENZENE	290000	1400000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
CHLORODIBROMOMETHANE	680	3300	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
CHLOROETHANE	15000000	61000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
CHLOROFORM	290	1500	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
CHLOROMETHANE	120000	500000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
CIS-1,2-DICHLOROETHENE	780000	10000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
CIS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
CYCLOHEXANE	7000000	29000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
DICHLORODIFLUOROMETHANE	180000	780000	4.2 UJ	4.1 UJ	3.9 UJ	4.2 U	4.7 U	4 U	3.8 U
ETHYLBENZENE	5400	27000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
ISOPROPYLBENZENE	2100000	11000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
M+P-XYLENES			4.2 UJ	4.1 U	3.9 U	4.2 U	2.7 J	4 U	3.8 U
METHYL ACETATE	78000000	1E+09	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
METHYL CYCLOHEXANE			4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
METHYL TERT-BUTYL ETHER	43000	220000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
METHYLENE CHLORIDE	11000	53000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
O-XYLENE	3800000	19000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
STYRENE	6300000	36000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
TETRACHLOROETHENE	550	2600	4.2 UJ	4.1 U	3.9 UJ	4.2 U	4.7 U	4 U	3.8 U
TOLUENE	5000000	45000000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
TOTAL CHLORINATED ETHENES			4.2 UJ	4.1 UJ	3.9 UJ	4.2 U	4.7 U	4 U	3.8 U
TOTAL CHLORINATED VOCS			4.2 UJ	4.1 UJ	3.9 UJ	4.2 UJ	4.7 UJ	4 UJ	3.8 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
LOCATION ID			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL XYLENES			630000	2700000	4.2 UJ	4.1 U	3.9 U	4.2 U	2.7 J
TRANS-1,2-DICHLOROETHENE	150000	690000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
TRICHLOROETHENE	2800	14000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
TRICHLOROFUOROMETHANE	790000	3400000	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
VINYL CHLORIDE	60	1700	4.2 UJ	4.1 U	3.9 U	4.2 U	4.7 U	4 U	3.8 U
SEMIVOLATILES (UG/KG)									
1,1-BIPHENYL	3900000	51000000	330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 UJ	3.5 UJ	3.3 UJ	3.7 UJ	3.3 UJ	3.3 UJ	3.3 UJ
1,4-DIOXANE	44000	160000	3.3 U	3.5 U	3.3 U	3.7 UJ	3.3 U	3.3 U	3.3 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	350 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	3.5 UJ	3.3 U	3.7 UJ	3.3 U	3.3 U	3.3 U
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	715 U	670 U	670 UJ	670 U	670 U	670 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 UJ	350 U	330 U	330 UJ	330 U	330 U	330 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	3.5 UJ	3.3 U	3.7 UJ	3.3 U	3.3 U	3.3 U
2,4-DIMETHYLPHENOL	1200000	12000000	330 UJ	167 UJ	330 UJ	3.7 UJ	330 UJ	330 UJ	330 UJ
2,4-DINITROPHENOL	120000	1200000	670 UJ	715 UJ	670 UJ	670 UJ	670 UJ	670 UJ	670 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
2,6-DINITROTOLUENE	61000	620000	330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
2-CHLOROPHENOL	390000	5100000	4.8	3.5 U	3.6	3.7 UJ	3.3 U	3.3 U	3.3 U
2-METHYLNAPHTHALENE	310000	4100000	13 J	3.5 UJ	3.3 UJ	15 J	3.3 UJ	3.3 UJ	3.3 UJ
2-METHYLPHENOL	3100000	31000000	3.3 UJ	3.5 UJ	3.3 UJ	3.7 UJ	3.3 UJ	3.3 UJ	3.3 UJ
2-NITROANILINE	610000	6000000	670 U	715 U	670 U	670 UJ	670 U	670 U	670 U
2-NITROPHENOL			330 UJ	350 U	330 U	330 UJ	330 U	330 U	330 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
LOCATION ID			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
3,3'-DICHLOROBENZIDINE	1100	3800	330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
3-NITROANILINE			670 U	715 U	670 U	670 UJ	670 U	670 U	670 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	715 UJ	670 UJ	670 UJ	670 UJ	670 UJ	670 UJ
4-BROMOPHENYL PHENYL ETHER			330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	3.5 UJ	3.3 U	3.7 UJ	3.3 U	3.3 U	3.3 U
4-CHLOROANILINE	2400	8600	330 UJ	350 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	3.5 UJ	3.3 UJ	3.7 UJ	3.3 UJ	3.3 UJ	3.3 UJ
4-NITROANILINE	24000	86000	670 U	715 U	670 U	670 UJ	670 U	670 U	670 U
4-NITROPHENOL			670 UJ	715 UJ	670 UJ	670 UJ	670 UJ	670 UJ	670 UJ
ACENAPHTHENE	3400000	33000000	3.3 U	3.5 U	3.3 U	47 J	3.3 U	3.3 U	3.3 U
ACENAPHTHYLENE	3400000	33000000	3.3 U	3.5 U	3.3 U	76 J	3.3 U	3.3 U	3.3 U
ACETOPHENONE	7800000	100000000	330 UJ	350 U	330 U	330 UJ	330 U	330 U	330 U
ANTHRACENE	17000000	170000000	3.3 U	3.5 U	3.3 U	86 J	3.3 U	3.3 U	3.3 U
ATRAZINE	2100	7500	3.3 U	3.5 U	3.3 U	3.7 UJ	3.3 U	3.3 U	3.3 U
BENZALDEHYDE	7800000	100000000	330 UJ	350 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
BENZO(A)ANTHRACENE	150	2100	3.9	3.5 U	3.3 U	150 J	3.3 U	3.3 U	3.3 U
BENZO(A)PYRENE	15	210	3.3 U	3.5 U	3.3 U	200 J	3.3 U	3.3 U	3.3 U
BENZO(B)FLUORANTHENE	150	2100	3.3 U	3.5 UJ	3.3 U	320 J	3.3 U	3.3 U	3.3 U
BENZO(G,H,I)PERYLENE	1700000	17000000	3.3 U	3.5 U	3.3 U	180 J	3.3 U	3.3 U	3.3 U
BENZO(K)FLUORANTHENE	1500	21000	3.3 U	3.5 U	3.3 U	83 J	3.3 U	3.3 U	3.3 U
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 UJ	350 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	350 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	350 U	330 U	330 UJ	330 U	65 J	330 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
LOCATION ID			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BUTYL BENZYL PHTHALATE			260000	910000	330 U	350 U	330 U	330 UJ	330 U
CAPROLACTAM	31000000	310000000	330 UJ	350 U	330 U	330 UJ	330 U	330 U	330 U
CARBAZOLE			330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
CHRYSENE	15000	210000	4.3	3.5 U	3.3 U	190 J	3.3 U	3.3 U	3.3 U
DIBENZO(A,H)ANTHRACENE	15	210	3.3 U	3.5 U	3.3 U	43 J	3.3 U	3.3 U	3.3 U
DIBENZOFURAN	78000	1000000	330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
DIETHYL PHTHALATE	49000000	490000000	330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
DIMETHYL PHTHALATE			330 U	350 U	330 U	330 UJ	330 U	330 U	330 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	103 J	330 U	330 UJ	330 U	330 U	330 U
DI-N-OCTYL PHTHALATE			330 UJ	350 UJ	330 U	330 UJ	330 U	330 U	330 U
FLUORANTHENE	2300000	22000000	4.4	3.5 U	3.3 U	310 J	3.3 U	3.3 U	3.3 U
FLUORENE	2300000	22000000	3.3 U	3.5 U	3.3 U	84 J	3.3 U	3.3 U	3.3 U
HEXACHLOROENZENE	300	1100	3.3 U	3.5 U	3.3 U	3.7 UJ	3.3 U	3.3 U	3.3 U
HEXACHLOROBUTADIENE	6200	22000	330 UJ	350 U	330 U	330 UJ	330 U	330 U	330 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	350 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
HEXACHLOROETHANE	35000	120000	330 UJ	350 U	330 U	330 UJ	330 U	330 U	330 U
HIGH MOLECULAR WEIGHT PAHS			17.5 J	3.5 UJ	3.3 U	1930 J	3.3 U	3.3 U	3.3 U
INDENO(1,2,3-CD)PYRENE	150	2100	3.3 U	3.5 UJ	3.3 U	140 J	3.3 U	3.3 U	3.3 U
ISOPHORONE	510000	1800000	330 UJ	350 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
LOW MOLECULAR WEIGHT PAHS			26.4 J	3.5 UJ	3.3 UJ	601 J	3.3 UJ	3.3 UJ	3.3 UJ
NAPHTHALENE	3600	18000	6.5	3.5 U	3.3 U	13 J	3.3 U	3.3 U	3.3 U
NITROBENZENE	4800	24000	330 UJ	350 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	350 UJ	330 UJ	330 UJ	330 UJ	330 UJ	330 UJ
N-NITROSODIPHENYLAMINE	99000	350000	330 U	350 U	330 U	330 UJ	330 U	330 U	330 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
LOCATION ID									
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
PENTACHLOROPHENOL	3000	9000	670 UJ	354 UJ	670 UJ	670 UJ	670 UJ	670 UJ	670 UJ
PHENANTHRENE	1700000	17000000	6.9 J	3.5 U	3.3 U	280 J	3.3 U	3.3 U	3.3 U
PHENOL	18000000	180000000	30	11.4 J	19	3.7 UJ	5.8	29	19
PYRENE	1700000	17000000	4.9 J	3.5 U	3.3 U	310 J	3.3 U	3.3 U	3.3 U
TOTAL CARCINOGENIC PAHS-HALFND	15	210	16.4	3.5 UJ	3.3 U	1130 J	3.3 U	3.3 U	3.3 U
TOTAL CARCINOGENIC PAHS-POS	15	210	8.2	3.5 UJ	3.3 U	1130 J	3.3 U	3.3 U	3.3 U
TOTAL CHLORINATED VOCS			330 UJ	350 U	330 U	330 UJ	330 U	330 U	330 U
TOTAL PAHS			43.9 J	3.5 UJ	3.3 UJ	2530 J	3.3 UJ	3.3 UJ	3.3 UJ
PESTICIDES/PCBS (UG/KG)									
4,4'-DDD	2000	7200	3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
4,4'-DDE	1400	5100	3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
4,4'-DDT	1700	7000	3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
ALDRIN	29	100	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ALPHA-BHC	77	270	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ALPHA-CHLORDANE	1600	6500	1.7 UJ	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
AROCLOR-1016	3900	21000	33 U		33 U				
AROCLOR-1221	140	540	33 U	35 U	33 U	33 U	33 U	33 U	33 U
AROCLOR-1232	140	540	33 U	35 U	33 U	33 U	33 U	33 U	33 U
AROCLOR-1242	220	740	33 U	35 U	33 U	33 U	33 U	33 U	33 U
AROCLOR-1248	220	740	33 U	35 U	33 U	33 U	33 U	33 U	33 U
AROCLOR-1254	220	740	33 U	35 U	33 U	33 U	33 U	33 U	33 U
AROCLOR-1260	220	740	33 U	35 U	33 U	33 U	33 U	33 U	33 U
AROCLOR-1262			33 U	35 U	33 U	33 U	33 U	33 U	33 U
AROCLOR-1268			33 U	35 U	33 U	33 U	33 U	33 U	33 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
LOCATION ID			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BETA-BHC			270	960	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U
DELTA-BHC	77	270	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
DIELDRIN	30	110	3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
ENDOSULFAN I	370000	3700000	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ENDOSULFAN II	370000	3700000	3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
ENDRIN	18000	180000	3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
ENDRIN KETONE	18000	180000	3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
GAMMA-BHC (LINDANE)	520	2100	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
GAMMA-CHLORDANE	1600	6500	1.7 UJ	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
HEPTACHLOR	110	380	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
HEPTACHLOR EPOXIDE	53	190	1.7 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
METHOXYCHLOR	310000	3100000	17 UJ	18 U	17 U	17 U	17 U	17 U	17 U
TOTAL AROCLOR	220	740	33 U	35 U	33 U	33 U	33 U	33 U	33 U
TOTAL CHLORDANE			1.7 UJ	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
TOTAL DDD/DDE/DDT			3.3 U	3.5 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
TOXAPHENE	440	1600	170 U	180 U	170 U	170 U	170 U	170 U	170 U
METALS (MG/KG)									
ALUMINUM	77000	990000	10400	6070 J	1780	3070	8270	6480	9640
ANTIMONY	31	410	0.11 UJ	0.115 UJ	0.14 UJ	0.11 UJ	0.14 UJ	0.18 UJ	0.12 UJ
ARSENIC	0.39	1.6	6.5 J	20.9 J	18 J	10 J	34.7 J	18.9 J	6.5 J
BARIUM	15000	190000	30	8.9 J	9.6 J	10.2 J	2.6 J	17.4 J	24.1 J
BERYLLIUM	160	2000	0.43	0.27	0.3	0.16	0.21	0.38	0.44
CADMIUM	70	800	0.16	0.285	0.22	0.15	0.29	0.25 J	0.19
CALCIUM			280 J	244 J	542 J	53.3 J	483 J	6.7 UJ	4.5 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
LOCATION ID									
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
CHROMIUM	0.29	5.6	11.9 J	13.3 J	12.2 J	4.7 J	23.5 J	10.7 J	11.8 J
COBALT	23	300	13.1 J	13.4 J	7.2 J	13.3 J	18.4 J	17.3 J	12.2 J
COPPER	3100	41000	6.1 J	23.4 J	21.8 J	13.1 J	28.1 J	22.8 J	18.2 J
IRON	55000	720000	25000	31700	40800	18500	42100	39200	30200
LEAD	400	800	8.1 J	7.45 J	30.3 J	5.3 J	3.5 J	12.4 J	7.3 J
MAGNESIUM			1750	2030	175	849	3140	1240	2880
MANGANESE	1800	23000	471 J	240 J	58.3 J	342 J	186 J	396 J	364 J
MERCURY	5.6	34	0.028 J	0.0154 J	0.028 J	0.006 U	0.0061 U	0.028 J	0.0057 U
NICKEL	1500	20000	26.4	31.4 J	31.8	17.6	38.8	25.8	20
POTASSIUM			259 J	208 J	147 J	242 J	92.6 J	301 J	624 J
SELENIUM	390	5100	0.72 J	0.495 U	0.63 U	0.48 U	0.62 U	0.8 U	0.7 J
SILVER	390	5100	0.048 U	0.0505 UJ	0.064 U	0.049 U	0.063 U	0.081 U	0.054 U
SODIUM			46.9	16 J	40.7	11 J	12.7 J	34.4 J	35.9
THALLIUM			0.15 U	0.155 U	0.19 U	0.15 U	0.19 U	0.24 U	0.16 U
VANADIUM	390	5200	18.3	14	12.9	8.5	18.4	16.7	16.6
ZINC	23000	310000	47.6	83.4 J	66.9	35.7	96.6	66.3	45.5
MISCELLANEOUS PARAMETERS (S.U.)									
PH			NA	NA	6.1	NA	6	NA	6.2
MISCELLANEOUS PARAMETERS (MG/KG)									
TOTAL ORGANIC CARBON			NA	NA	22000	NA	9700	NA	16000
DIOXINS/FURANS (NG/KG)									
1,2,3,4,6,7,8,9-OCDD	15000	60000	4480 J	490	NA	1790 J	NA	6250 J	NA
1,2,3,4,6,7,8,9-OCDF	15000	60000	0.136 U	0.136 U	NA	0.195 J	NA	0.358 J	NA
1,2,3,4,6,7,8-HPCDD	450	1800	38.7	5.76	NA	13	NA	41.1	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
LOCATION ID			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
SAMPLE DATE									
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
1,2,3,4,6,7,8-HPCDF	450	1800	0.175 J	0.0533 J	NA	0.0503 J	NA	0.08 J	NA
1,2,3,4,7,8,9-HPCDF	450	1800	0.122 U	0.0808 U	NA	0.0224 U	NA	0.0325 U	NA
1,2,3,4,7,8-HXCDD	45	180	0.212 J	0.131 J	NA	0.0854 J	NA	0.168 J	NA
1,2,3,4,7,8-HXCDF	45	180	0.0775 U	0.0574 U	NA	0.0141 U	NA	0.0386 J	NA
1,2,3,6,7,8-HXCDD	45	180	0.82 J	0.0832 U	NA	0.0797 J	NA	0.088 J	NA
1,2,3,6,7,8-HXCDF	45	180	0.733 U	0.054 J	NA	0.063 J	NA	0.0442 J	NA
1,2,3,7,8,9-HXCDD	45	180	0.84 J	0.0881 U	NA	0.0666 J	NA	0.0838 J	NA
1,2,3,7,8,9-HXCDF	45	180	0.0985 U	0.073 U	NA	0.0184 U	NA	0.0220 U	NA
1,2,3,7,8-PECDD	4.5	18	0.140 U	0.0842 U	NA	0.0263 U	NA	0.0286 U	NA
1,2,3,7,8-PECDF	150	600	0.109 U	0.0843 U	NA	0.0202 U	NA	0.0236 U	NA
2,3,4,6,7,8-HXCDF	45	180	0.0841 U	0.0623 U	NA	0.0153 U	NA	0.0183 U	NA
2,3,4,7,8-PECDF	15	60	0.108 U	0.0836 U	NA	0.0194 U	NA	0.0228 U	NA
2,3,7,8-TCDD	4.5	18	0.266 U	0.106 U	NA	0.0254 U	NA	0.0269 U	NA
2,3,7,8-TCDF	45	180	0.248 U	0.13 U	NA	0.0492 U	NA	0.0360 U	NA
TEQ BIRD	4.5	18	0.591 J	0.0644 J	NA	0.211 J	NA	0.693 J	NA
TEQ BIRD HALFND	4.5	18	1.03 J	0.288 J	NA	0.274 J	NA	0.753 J	NA
TEQ FISH	4.5	18	0.611 J	0.111 J	NA	0.243 J	NA	0.761 J	NA
TEQ FISH HALFND	4.5	18	0.9 J	0.259 J	NA	0.278 J	NA	0.798 J	NA
TEQ MAMMAL	4.5	18	1.92 J	0.22 J	NA	0.697 J	NA	2.33 J	NA
TEQ MAMMAL HALFND	4.5	18	2.2 J	0.358 J	NA	0.731 J	NA	2.36 J	NA
TOTAL HPCDD			81.5	11.4 J	NA	20.9	NA	70.2	NA
TOTAL HPCDF			0.175 J	0.0533 J	NA	0.0169 U	NA	0.118 J	NA
TOTAL HXCDD			9.73	1.31 J	NA	0.0797 J	NA	0.601 J	NA
TOTAL HXCDF			0.0733 U	0.0543 U	NA	0.0131 U	NA	0.0442 J	NA
TOTAL PECDD			0.140 U	0.278 J	NA	0.183 J	NA	0.565 J	NA
TOTAL PECDF			0.108 U	0.0836 U	NA	0.0194 U	NA	0.0228 U	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-938-0204-AVG	TF4-SB-938-0810	TF4-SB-939-0204	TF4-SB-939-0810	TF4-SB-940-0204	TF4-SB-940-0810
LOCATION ID			TF4-SB920	TF4-SB938	TF4-SB938	TF4-SB939	TF4-SB939	TF4-SB940	TF4-SB940
SAMPLE DATE			04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10	04/22/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	8 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	10 FT	4 FT	10 FT
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL TCDD					0.266 U	0.0815 J	NA	0.184 J	NA
TOTAL TCDF			0.248 U	0.13 U	NA	0.299 J	NA	0.134 J	NA
PETROLEUM HYDROCARBONS (MG/KG)									
EXTRACTABLE PETROLEUM HYDROCARBONS			66 J	18 U	21 UJ	58 U	22 UJ	NA	NA

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-941-0204	TF4-SB-941-0810-AVG	TF4-SB-942-0204	TF4-SB-943-0204	TF4-SB-943-0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
VOLATILES (UG/KG)								
1,1,1-TRICHLOROETHANE	8700000	38000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,1,2,2-TETRACHLOROETHANE	560	2800	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,1,2-TRICHLOROETHANE	1100	5300	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,1-DICHLOROETHANE	3300	17000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,1-DICHLOROETHENE	240000	1100000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,2,3-TRICHLOROBENZENE	49000	490000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,2,4-TRICHLOROBENZENE	22000	99000	4.2 UJ	4.5 UJ	4.5 UJ	5.2 UJ	5 UJ	4.5 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,2-DIBROMOETHANE	34	170	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,2-DICHLOROBENZENE	1900000	9800000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,2-DICHLOROETHANE	430	2200	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,2-DICHLOROPROPANE	890	4500	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,3-DICHLOROBENZENE			4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
1,4-DICHLOROBENZENE	2400	12000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
2-BUTANONE	28000000	200000000	4.2 UJ	4.5 U	4.5 U	8.3	5 U	4.5 U
2-HEXANONE	210000	1400000	4.2 UJ	4.5 UJ	4.5 UJ	5.2 UJ	5 UJ	4.5 UJ
4-METHYL-2-PENTANONE	5300000	53000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
ACETONE	61000000	630000000	4.2 UJ	7.6 J	4.5 UJ	22 J	180 J	4.5 UJ
BENZENE	1100	5400	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
BROMOCHLOROMETHANE			4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
BROMODICHLOROMETHANE	270	1400	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
BROMOFORM	61000	220000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
BROMOMETHANE	7300	32000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920- 0204	TF4-SB-941- 0204	TF4-SB-941- 0810-AVG	TF4-SB-942- 0204	TF4-SB-943- 0204	TF4-SB-943- 0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
BTEX					4.2 UJ	4.5 U	4.5 U	1.1 J
CARBON DISULFIDE	820000	3700000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
CARBON TETRACHLORIDE	610	3000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
CHLOROBENZENE	290000	1400000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
CHLORODIBROMOMETHANE	680	3300	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
CHLOROETHANE	15000000	61000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
CHLOROFORM	290	1500	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
CHLOROMETHANE	120000	500000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
CIS-1,2-DICHLOROETHENE	780000	10000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
CIS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
CYCLOHEXANE	7000000	29000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
DICHLORODIFLUOROMETHANE	180000	780000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
ETHYLBENZENE	5400	27000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
ISOPROPYLBENZENE	2100000	11000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
M+P-XYLENES			4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
METHYL ACETATE	78000000	1E+09	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
METHYL CYCLOHEXANE			4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
METHYL TERT-BUTYL ETHER	43000	220000	4.2 UJ	4.5 U	4.5 U	5.2 U	1.1 J	4.5 U
METHYLENE CHLORIDE	11000	53000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
O-XYLENE	3800000	19000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
STYRENE	6300000	36000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
TETRACHLOROETHENE	550	2600	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
TOLUENE	5000000	45000000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
TOTAL CHLORINATED ETHENES			4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
TOTAL CHLORINATED VOCS			4.2 UJ	4.5 UJ	4.5 UJ	5.2 UJ	5 UJ	4.5 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-941-0204	TF4-SB-941-0810-AVG	TF4-SB-942-0204	TF4-SB-943-0204	TF4-SB-943-0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
TOTAL XYLENES	630000	2700000	4.2 UJ	4.5 U	4.5 U	1.1 J	5 U	4.5 U
TRANS-1,2-DICHLOROETHENE	150000	690000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
TRICHLOROETHENE	2800	14000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
TRICHLOROFLUOROMETHANE	790000	3400000	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
VINYL CHLORIDE	60	1700	4.2 UJ	4.5 U	4.5 U	5.2 U	5 U	4.5 U
SEMIVOLATILES (UG/KG)								
1,1-BIPHENYL	3900000	51000000	330 U	380 U	385 U	400 U	400 UJ	370 UJ
1,2,4,5-TETRACHLOROENZENE	18000	180000	3.3 UJ	3.8 UJ	3.85 UJ	4 U	4 U	3.7 U
1,4-DIOXANE	44000	160000	3.3 U	3.8 UJ	3.85 UJ	4 U	4 U	3.7 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 UJ	380 U	385 U	400 U	400 UJ	370 UJ
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 U	3.8 UJ	3.85 UJ	4 UJ	4 U	3.7 U
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	760 U	785 U	820 U	820 U	740 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 UJ	380 U	385 U	400 U	400 U	370 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 U	3.8 UJ	3.85 UJ	4 UJ	4 U	3.7 U
2,4-DIMETHYLPHENOL	1200000	12000000	330 UJ	380 UJ	385 UJ	4 UJ	4 UJ	3.7 UJ
2,4-DINITROPHENOL	120000	1200000	670 UJ	760 UJ	785 UJ	820 UJ	820 UJ	740 UJ
2,4-DINITROTOLUENE	1600	5500	330 U	380 U	385 U	400 U	400 U	370 U
2,6-DINITROTOLUENE	61000	620000	330 U	380 U	385 U	400 U	400 U	370 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	380 U	385 U	400 U	400 U	370 U
2-CHLOROPHENOL	390000	5100000	4.8	3.8 UJ	3.85 UJ	4 U	4 U	3.7 U
2-METHYLNAPHTHALENE	310000	4100000	13 J	3.8 UJ	3.85 UJ	4 U	4 UJ	3.7 U
2-METHYLPHENOL	3100000	31000000	3.3 UJ	380 U	99.8 J	4 U	4 U	3.7 U
2-NITROANILINE	610000	6000000	670 U	760 U	785 U	820 U	820 U	740 U
2-NITROPHENOL			330 UJ	380 U	385 U	400 U	400 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-941-0204	TF4-SB-941-0810-AVG	TF4-SB-942-0204	TF4-SB-943-0204	TF4-SB-943-0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
3,3'-DICHLOROBENZIDINE	1100	3800	330 U	380 U	385 U	400 U	400 U	370 U
3-NITROANILINE			670 U	760 U	785 U	820 U	820 U	740 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 UJ	760 UJ	785 UJ	820 UJ	820 UJ	740 UJ
4-BROMOPHENYL PHENYL ETHER			330 U	380 U	385 U	400 U	400 U	370 U
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	3.8 UJ	3.85 UJ	4 UJ	4 U	3.7 U
4-CHLOROANILINE	2400	8600	330 UJ	380 UJ	385 UJ	400 UJ	400 UJ	370 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	380 U	385 U	400 U	400 U	370 U
4-METHYLPHENOL	310000	3100000	3.3 UJ	3.8 UJ	5.52 J	4 U	4 U	3.7 U
4-NITROANILINE	24000	86000	670 U	760 U	785 U	820 U	820 U	740 U
4-NITROPHENOL			670 UJ	760 UJ	785 UJ	820 UJ	820 U	740 U
ACENAPHTHENE	3400000	33000000	3.3 U	3.8 UJ	3.85 UJ	4 U	4 U	3.7 U
ACENAPHTHYLENE	3400000	33000000	3.3 U	3.8 UJ	3.85 UJ	4 U	4 U	3.7 U
ACETOPHENONE	7800000	100000000	330 UJ	380 U	385 U	400 U	400 UJ	370 UJ
ANTHRACENE	17000000	170000000	3.3 U	3.8 UJ	3.85 UJ	12	4 U	3.7 U
ATRAZINE	2100	7500	3.3 U	3.8 UJ	3.85 UJ	4 U	4 U	3.7 U
BENZALDEHYDE	7800000	100000000	330 UJ	380 UJ	385 UJ	400 UJ	400 UJ	370 UJ
BENZO(A)ANTHRACENE	150	2100	3.9	3.8 UJ	3.85 UJ	28	4 U	3.7 U
BENZO(A)PYRENE	15	210	3.3 U	3.8 UJ	3.85 UJ	29 J	4 U	3.7 U
BENZO(B)FLUORANTHENE	150	2100	3.3 U	3.8 UJ	3.85 UJ	37 J	4 U	3.7 U
BENZO(G,H,I)PERYLENE	1700000	17000000	3.3 U	3.8 UJ	3.85 UJ	21	4 U	3.7 U
BENZO(K)FLUORANTHENE	1500	21000	3.3 U	3.8 UJ	3.85 UJ	27	4 UJ	3.7 U
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 UJ	380 U	385 U	400 U	400 U	370 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 UJ	380 U	385 U	400 U	400 U	370 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	330 U	380 U	131 J	400 U	400 U	370 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920- 0204	TF4-SB-941- 0204	TF4-SB-941- 0810-AVG	TF4-SB-942- 0204	TF4-SB-943- 0204	TF4-SB-943- 0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
BUTYL BENZYL PHTHALATE			260000	910000	330 U	380 U	170 J	400 U
CAPROLACTAM	31000000	310000000	330 UJ	380 U	385 U	400 U	400 U	370 U
CARBAZOLE			330 U	380 U	385 U	400 U	400 U	370 U
CHRYSENE	15000	210000	4.3	3.8 UJ	3.85 UJ	36	4 U	3.7 U
DIBENZO(A,H)ANTHRACENE	15	210	3.3 U	3.8 UJ	3.85 UJ	5.6 J	4 UJ	3.7 U
DIBENZOFURAN	78000	1000000	330 U	380 U	385 U	400 U	400 U	370 U
DIETHYL PHTHALATE	49000000	490000000	330 U	380 U	385 U	400 U	400 U	370 U
DIMETHYL PHTHALATE			330 U	380 U	385 U	400 U	400 U	370 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	380 U	385 U	400 U	400 U	370 U
DI-N-OCTYL PHTHALATE			330 UJ	380 U	385 U	400 U	400 U	370 U
FLUORANTHENE	2300000	22000000	4.4	3.8 UJ	3.85 UJ	56	4 U	3.7 U
FLUORENE	2300000	22000000	3.3 U	3.8 UJ	3.85 UJ	4.9	4 U	3.7 U
HEXACHLOROBENZENE	300	1100	3.3 U	3.8 UJ	3.85 UJ	4 U	4 U	3.7 U
HEXACHLOROBUTADIENE	6200	22000	330 UJ	380 U	385 U	400 U	400 U	370 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 UJ	380 UJ	385 UJ	400 UJ	400 UJ	370 UJ
HEXACHLOROETHANE	35000	120000	330 UJ	380 U	385 U	400 U	400 U	370 U
HIGH MOLECULAR WEIGHT PAHS			17.5 J	3.8 UJ	3.85 UJ	308 J	4 UJ	3.7 U
INDENO(1,2,3-CD)PYRENE	150	2100	3.3 U	3.8 UJ	3.85 UJ	19 J	4 UJ	3.7 U
ISOPHORONE	510000	1800000	330 UJ	380 U	385 U	400 U	400 U	370 U
LOW MOLECULAR WEIGHT PAHS			26.4 J	3.8 UJ	3.85 UJ	53.9	4 UJ	3.7 U
NAPHTHALENE	3600	18000	6.5	3.8 UJ	3.85 UJ	4 U	4 U	3.7 U
NITROBENZENE	4800	24000	330 UJ	380 U	385 U	400 U	400 UJ	370 UJ
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 UJ	380 U	385 U	400 U	400 U	370 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	380 U	385 U	400 U	400 U	370 U

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TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-941-0204	TF4-SB-941-0810-AVG	TF4-SB-942-0204	TF4-SB-943-0204	TF4-SB-943-0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
PENTACHLOROPHENOL			3000	9000	670 UJ	38 UJ	38.5 UJ	40 U
PHENANTHRENE	1700000	17000000	6.9 J	3.8 UJ	3.85 UJ	37	4 U	3.7 U
PHENOL	18000000	180000000	30	4.5 J	4.82 J	4 U	4 U	3.7 U
PYRENE	1700000	17000000	4.9 J	3.8 UJ	3.85 UJ	49	4 U	3.7 U
TOTAL CARCINOGENIC PAHS-HALFND	15	210	16.4	3.8 UJ	3.85 UJ	182 J	4 UJ	3.7 U
TOTAL CARCINOGENIC PAHS-POS	15	210	8.2	3.8 UJ	3.85 UJ	182 J	4 UJ	3.7 U
TOTAL CHLORINATED VOCS			330 UJ	380 U	385 U	400 U	400 U	370 U
TOTAL PAHS			43.9 J	3.8 UJ	3.85 UJ	362 J	4 UJ	3.7 U
PESTICIDES/PCBS (UG/KG)								
4,4'-DDD	2000	7200	3.3 U	3.7 U	3.85 U	4.6	4 U	3.6 U
4,4'-DDE	1400	5100	3.3 U	3.7 U	3.85 U	4.1 U	4 U	3.6 U
4,4'-DDT	1700	7000	3.3 U	3.7 UJ	3.85 UJ	7.1 J	4 UJ	3.6 UJ
ALDRIN	29	100	1.7 U	1.9 U	2 U	2.1 U	2.1 U	1.9 U
ALPHA-BHC	77	270	1.7 U	1.9 U	2 U	2.1 U	2.1 UJ	1.9 UJ
ALPHA-CHLORDANE	1600	6500	1.7 UJ	1.9 U	2 U	2.1 U	2.1 U	1.9 U
AROCLOR-1016	3900	21000	33 U	37 U	38.5 U	41 U	40 U	36 U
AROCLOR-1221	140	540	33 U	37 U	38.5 U	41 U	40 U	36 U
AROCLOR-1232	140	540	33 U	37 U	38.5 U	41 U	40 U	36 U
AROCLOR-1242	220	740	33 U	37 U	38.5 U	41 U	40 U	36 U
AROCLOR-1248	220	740	33 U	37 U	38.5 U	41 U	40 U	36 U
AROCLOR-1254	220	740	33 U	37 U	38.5 U	100 J	40 U	36 U
AROCLOR-1260	220	740	33 U	37 U	38.5 U	41 U	40 U	36 U
AROCLOR-1262			33 U	37 U	38.5 U	41 U	40 U	36 U
AROCLOR-1268			33 U	37 U	38.5 U	41 U	40 U	36 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920- 0204	TF4-SB-941- 0204	TF4-SB-941- 0810-AVG	TF4-SB-942- 0204	TF4-SB-943- 0204	TF4-SB-943- 0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
BETA-BHC			270	960	1.7 U	1.9 U	2 U	2.1 U
DELTA-BHC	77	270	1.7 U	1.9 U	2 U	2.1 U	2.1 U	1.9 U
DIELDRIN	30	110	3.3 U	3.7 U	3.85 U	4.1 U	4 U	3.6 U
ENDOSULFAN I	370000	3700000	1.7 U	1.9 U	2 U	2.1 U	2.1 U	1.9 U
ENDOSULFAN II	370000	3700000	3.3 U	3.7 U	3.85 U	4.1 U	4 U	3.6 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	3.7 U	3.85 U	7.1	4 U	3.6 U
ENDRIN	18000	180000	3.3 U	3.7 U	3.85 U	4.1 U	4 U	3.6 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	3.7 U	3.85 U	4.1 U	4 U	3.6 U
ENDRIN KETONE	18000	180000	3.3 U	3.7 U	3.85 U	4.1 U	4 U	3.6 U
GAMMA-BHC (LINDANE)	520	2100	1.7 U	1.9 U	2 U	2.1 U	2.1 UJ	1.9 UJ
GAMMA-CHLORDANE	1600	6500	1.7 UJ	1.9 U	2 U	2.1 U	2.1 U	1.9 U
HEPTACHLOR	110	380	1.7 U	1.9 U	2 U	2.1 U	2.1 U	1.9 U
HEPTACHLOR EPOXIDE	53	190	1.7 U	1.9 U	2 U	2.1 U	2.1 U	1.9 U
METHOXYCHLOR	310000	3100000	17 UJ	19 UJ	20 UJ	21 U	21 UJ	19 UJ
TOTAL AROCLOR	220	740	33 U	37 U	38.5 U	100 J	40 U	36 U
TOTAL CHLORDANE			1.7 UJ	1.9 U	2 U	2.1 U	2.1 U	1.9 U
TOTAL DDD/DDE/DDT			3.3 U	3.7 UJ	3.85 UJ	11.7 J	4 UJ	3.6 UJ
TOXAPHENE	440	1600	170 U	190 U	200 U	210 U	210 U	190 U
METALS (MG/KG)								
ALUMINUM	77000	990000	10400	4930	3460	9220	4920	1000
ANTIMONY	31	410	0.11 UJ	0.15 UJ	0.15 UJ	0.2 UJ	0.19 UJ	0.16 UJ
ARSENIC	0.39	1.6	6.5 J	8.5 J	29.5	11.3 J	10.6 J	6.4 J
BARIUM	15000	190000	30	16.1	8.95 J	21.1 J	49.3	6.1 J
BERYLLIUM	160	2000	0.43	0.51 J	0.42 J	0.19 J	0.63 J	0.32 J
CADMIUM	70	800	0.16	0.13 J	1.15	0.081 J	0.48	0.75
CALCIUM			280 J	221 J	298 J	217 J	307 J	6 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-941-0204	TF4-SB-941-0810-AVG	TF4-SB-942-0204	TF4-SB-943-0204	TF4-SB-943-0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
CHROMIUM			0.29	5.6	11.9 J	9.6	11.9	11.4
COBALT	23	300	13.1 J	10.8 J	29.2 J	11.1	29 J	28.2 J
COPPER	3100	41000	6.1 J	19.7 J	31.8 J	12.3	20 J	20.2 J
IRON	55000	720000	25000	39600	45400	29000	66500	70700
LEAD	400	800	8.1 J	5.7 J	29.7	12.9 J	5.9 J	4.1 J
MAGNESIUM			1750	1020 J	949 J	2510	963 J	222 J
MANGANESE	1800	23000	471 J	282	382	391	2410	1740
MERCURY	5.6	34	0.028 J	0.0061 U	0.0056 U	0.024 J	0.011 UJ	0.006 U
NICKEL	1500	20000	26.4	18.7	46.9	19.3 J	39.4	96.9
POTASSIUM			259 J	321 J	299 J	201 J	206 J	89.5 J
SELENIUM	390	5100	0.72 J	4.1 UJ	3.45 UJ	0.86 U	7 UJ	6.5 UJ
SILVER	390	5100	0.048 U	0.096 UJ	0.255 UJ	0.087 U	0.22 UJ	0.35 UJ
SODIUM			46.9	22 UJ	19.6 UJ	40.9 J	14.5 UJ	8.8 UJ
THALLIUM			0.15 U	2	1.2	0.27 U	11.8	9
VANADIUM	390	5200	18.3	13.6 J	13.9 J	16.8	10.5 J	8.7 J
ZINC	23000	310000	47.6	48.8	122	54.8 J	176	193
MISCELLANEOUS PARAMETERS (S.U.)								
PH			NA	NA	5.55	NA	NA	5.8
MISCELLANEOUS PARAMETERS (MG/KG)								
TOTAL ORGANIC CARBON			NA	NA	4600	NA	NA	5000 U
DIOXINS/FURANS (NG/KG)								
1,2,3,4,6,7,8,9-OCDD	15000	60000	4480 J	4570 J	NA	1840 J	4320 J	NA
1,2,3,4,6,7,8,9-OCDF	15000	60000	0.136 U	0.138 UJ	NA	2.11 J	0.132 UJ	NA
1,2,3,4,6,7,8-HPCDD	450	1800	38.7	30.3	NA	20.6	36.2	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-941-0204	TF4-SB-941-0810-AVG	TF4-SB-942-0204	TF4-SB-943-0204	TF4-SB-943-0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
1,2,3,4,6,7,8-HPCDF			450	1800	0.175 J	0.113 UJ	NA	0.892 J
1,2,3,4,7,8,9-HPCDF	450	1800	0.122 U	0.0331 U	NA	0.0927 U	0.0593 U	NA
1,2,3,4,7,8-HXCDD	45	180	0.212 J	0.468 J	NA	0.149 J	0.151 J	NA
1,2,3,4,7,8-HXCDF	45	180	0.0775 U	0.0152 U	NA	0.117 U	0.0979 J	NA
1,2,3,6,7,8-HXCDD	45	180	0.82 J	0.154 J	NA	0.486 J	0.241 J	NA
1,2,3,6,7,8-HXCDF	45	180	0.733 U	0.168 J	NA	0.111 U	0.0786 J	NA
1,2,3,7,8,9-HXCDD	45	180	0.84 J	0.0366 U	NA	0.392 J	0.214 J	NA
1,2,3,7,8,9-HXCDF	45	180	0.0985 U	0.0190 U	NA	0.145 U	0.0572 U	NA
1,2,3,7,8-PECDD	4.5	18	0.140 U	0.0238 U	NA	0.0554 U	0.0619 U	NA
1,2,3,7,8-PECDF	150	600	0.109 U	0.0217 U	NA	0.0467 U	0.0722 U	NA
2,3,4,6,7,8-HXCDF	45	180	0.0841 U	0.0163 U	NA	0.124 U	0.0488 U	NA
2,3,4,7,8-PECDF	15	60	0.108 U	0.0214 U	NA	0.0463 U	0.0716 U	NA
2,3,7,8-TCDD	4.5	18	0.266 U	0.0592 U	NA	0.0922 U	0.0986 U	NA
2,3,7,8-TCDF	45	180	0.248 U	0.0556 U	NA	0.0919 U	0.0855 U	NA
TEQ BIRD	4.5	18	0.591 J	0.529 J	NA	0.265 J	0.517 J	NA
TEQ BIRD HALFND	4.5	18	1.03 J	0.615 J	NA	0.436 J	0.686 J	NA
TEQ FISH	4.5	18	0.611 J	0.74 J	NA	0.297 J	0.566 J	NA
TEQ FISH HALFND	4.5	18	0.9 J	0.792 J	NA	0.411 J	0.674 J	NA
TEQ MAMMAL	4.5	18	1.92 J	1.75 J	NA	0.87 J	1.74 J	NA
TEQ MAMMAL HALFND	4.5	18	2.2 J	1.81 J	NA	0.982 J	1.84 J	NA
TOTAL HPCDD			81.5	48.6	NA	39	73.4	NA
TOTAL HPCDF			0.175 J	0.119 U	NA	2.19 J	0.12 U	NA
TOTAL HXCDD			9.73	1.14 U	NA	2.09 J	2.53 U	NA
TOTAL HXCDF			0.0733 U	0.0145 U	NA	0.111 U	0.212 J	NA
TOTAL PECDD			0.140 U	0.896 J	NA	0.31 J	0.0619 U	NA
TOTAL PECDF			0.108 U	0.0214 U	NA	0.773 J	0.0716 U	NA

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.2
ANALYTICAL RESULTS - SUBSURFACE SOIL
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL - Residential Soil	EPA RSL Industrial Soil	TF4-SB-920-0204	TF4-SB-941-0204	TF4-SB-941-0810-AVG	TF4-SB-942-0204	TF4-SB-943-0204	TF4-SB-943-0810
LOCATION ID			TF4-SB920	TF4-SB941	TF4-SB941	TF4-SB942	TF4-SB943	TF4-SB943
SAMPLE DATE			04/22/10	04/15/10	04/15/10	04/20/10	04/15/10	04/15/10
TOP DEPTH			2 FT	2 FT	8 FT	2 FT	2 FT	8 FT
BOTTOM DEPTH			4 FT	4 FT	10 FT	4 FT	4 FT	10 FT
SACODE			NORMAL	NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
TOTAL TCDD			0.266 U	0.0592 U	NA	0.0922 U	0.0986 U	NA
TOTAL TCDF	0.248 U	0.552 J	NA	0.0919 U	0.749 J	NA		
PETROLEUM HYDROCARBONS (MG/KG)								
EXTRACTABLE PETROLEUM HYDROCARBONS	66 J	NA	NA	46	NA	NA		

TABLE A-4.3
ANALYTICAL RESULTS - GROUNDWATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-MW-912-0510	TF4-MW-913-0510-AVG	TF4-MW-914-0510	TF4-MW-919-0510	TF4-MW-920-0510	TF4-MW-921-0510	TF4-MW-922-0510
LOCATION ID			TF4-MW-912	TF4-MW-913	TF4-MW-914	TF4-MW-919	TF4-MW-920	TF4-MW-921	TF4-MW-922
SAMPLE DATE			05/12/10	05/12/10	05/11/10	05/12/10	05/11/10	05/10/10	05/10/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
VOLATILES (UG/L)									
1,1,1-TRICHLOROETHANE	9100	200	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	0.067		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	0.24	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	59000		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	2.4		1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	340	7	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ
1,2,3-TRICHLOROBENZENE	29		1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ
1,2,4-TRICHLOROBENZENE	2.3	70	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.00032	0.2	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 U
1,2-DIBROMOETHANE	0.0065	0.05	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROBENZENE	370	600	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	0.15	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	0.39	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE			1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	0.43	75	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	7100		5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-HEXANONE	47		5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	5 U
4-METHYL-2-PENTANONE	2000		5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	22000		5 U	5 U	5 U	5 U	5 U	5 UJ	5 UJ
BENZENE	0.41	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE			1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	0.12	80	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOFORM	8.5	80	1 U	1 U	1 U	1 U	1 U	1 U	1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.3
ANALYTICAL RESULTS - GROUNDWATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-MW-912-0510	TF4-MW-913-0510-AVG	TF4-MW-914-0510	TF4-MW-919-0510	TF4-MW-920-0510	TF4-MW-921-0510	TF4-MW-922-0510
			TF4-MW-912	TF4-MW-913	TF4-MW-914	TF4-MW-919	TF4-MW-920	TF4-MW-921	TF4-MW-922
LOCATION ID									
SAMPLE DATE			05/12/10	05/12/10	05/11/10	05/12/10	05/11/10	05/10/10	05/10/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
BROMOMETHANE	8.7		1 U	1 U	1 U	1 U	1 U	1 U	1 U
BTEX			1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	1000		1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	0.44	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	91	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLORODIBROMOMETHANE	0.15	80	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	21000		1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	0.19	80	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROMETHANE	190		1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	370	70	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	0.43		1 U	1 U	1 U	1 U	1 U	1 U	1 U
CYCLOHEXANE	13000		1 U	1 U	1 U	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	390		1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ
ETHYLBENZENE	1.5	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	680		1 U	1 U	1 U	1 U	1 U	1 U	1 U
M+P-XYLENES		10000	1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYL ACETATE	37000		1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE			1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYL TERT-BUTYL ETHER	12		1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	4.8	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
O-XYLENE	1200	10000	1 U	1 U	1 U	1 U	1 U	1 U	1 U
STYRENE	1600	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	0.11	5	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 U
TOLUENE	2300	1000	1 U	1 U	1 U	1 U	1 U	1 U	1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE A-4.3
ANALYTICAL RESULTS - GROUNDWATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-MW-912-0510	TF4-MW-913-0510-AVG	TF4-MW-914-0510	TF4-MW-919-0510	TF4-MW-920-0510	TF4-MW-921-0510	TF4-MW-922-0510
			TF4-MW-912	TF4-MW-913	TF4-MW-914	TF4-MW-919	TF4-MW-920	TF4-MW-921	TF4-MW-922
LOCATION ID									
SAMPLE DATE			05/12/10	05/12/10	05/11/10	05/12/10	05/11/10	05/10/10	05/10/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL 1,2-DICHLOROETHENE	330		1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOTAL CHLORINATED ETHENES			1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
TOTAL CHLORINATED VOCS			1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
TOTAL XYLENES	200	10000	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	110	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE			1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	2	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	1300		1 U	1 U	1 U	1 U	1 U	1 U	1 U
VINYL CHLORIDE	0.016	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (UG/L)									
1,1-BIPHENYL	1800		10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
1,2,4,5-TETRACHLOROBENZENE	11		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ
1,4-DIOXANE	6.1		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,2'-OXYBIS(1-CHLOROPROPANE)	0.32		10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
2,3,4,6-TETRACHLOROPHENOL	1100		0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
2,4,5-TRICHLOROPHENOL	3700		20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	6.1		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-DICHLOROPHENOL	110		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-DIMETHYLPHENOL	730		0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
2,4-DINITROPHENOL	73		20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE A-4.3
ANALYTICAL RESULTS - GROUNDWATER
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-MW-912-0510	TF4-MW-913-0510-AVG	TF4-MW-914-0510	TF4-MW-919-0510	TF4-MW-920-0510	TF4-MW-921-0510	TF4-MW-922-0510
			TF4-MW-912	TF4-MW-913	TF4-MW-914	TF4-MW-919	TF4-MW-920	TF4-MW-921	TF4-MW-922
LOCATION ID			05/12/10	05/12/10	05/11/10	05/12/10	05/11/10	05/10/10	05/10/10
SAMPLE DATE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SACODE			NM	NM	NM	NM	NM	NM	NM
QC TYPE									
2,4-DINITROTOLUENE	0.22		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-DINITROTOLUENE	37		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-CHLORONAPHTHALENE	2900		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-CHLOROPHENOL	180		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-METHYLNAPHTHALENE	150		0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
2-METHYLPHENOL	1800		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-NITROANILINE	370		20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-NITROPHENOL			10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-DICHLOROBENZIDINE	0.15		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
3-NITROANILINE			20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	2.9		20 U	20 U	20 U	20 U	20 U	20 UJ	20 UJ
4-BROMOPHENYL PHENYL ETHER			10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-CHLORO-3-METHYLPHENOL	3700		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ
4-CHLOROANILINE	0.34		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-CHLOROPHENYL PHENYL ETHER			10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-METHYLPHENOL	180		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-NITROANILINE	3.4		20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL			20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ
ACENAPHTHENE	2200		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ACENAPHTHYLENE	2200		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ACETOPHENONE	3700		10 U	10 U	10 U	10 U	10 U	10 U	10 U
ANTHRACENE	11000		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ATRAZINE	0.29	3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ
BENZALDEHYDE	3700		10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.3
ANALYTICAL RESULTS - GROUNDWATER
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-MW-912-0510	TF4-MW-913-0510-AVG	TF4-MW-914-0510	TF4-MW-919-0510	TF4-MW-920-0510	TF4-MW-921-0510	TF4-MW-922-0510
			TF4-MW-912	TF4-MW-913	TF4-MW-914	TF4-MW-919	TF4-MW-920	TF4-MW-921	TF4-MW-922
LOCATION ID			05/12/10	05/12/10	05/11/10	05/12/10	05/11/10	05/10/10	05/10/10
SAMPLE DATE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SACODE			NM	NM	NM	NM	NM	NM	NM
QC TYPE									
BENZO(A)ANTHRACENE	0.029		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BENZO(A)PYRENE	0.0029	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BENZO(B)FLUORANTHENE	0.029		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BENZO(G,H,I)PERYLENE	1100		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BENZO(K)FLUORANTHENE	0.29		0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
BIS(2-CHLOROETHOXY)METHAN E	110		10 U	10 U	10 U	10 U	10 U	10 U	10 U
BIS(2-CHLOROETHYL)ETHER	0.012		10 U	10 U	10 U	10 U	10 U	10 U	10 U
BIS(2-ETHYLHEXYL)PHTHALATE	4.8	6	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BUTYL BENZYL PHTHALATE	35		10 U	10 U	10 U	10 U	10 U	10 U	10 U
CAPROLACTAM	18000		10 U	10.5	10 U	11	10 U	10 U	10 U
CARBAZOLE			10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHRYSENE	2.9		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
DIBENZO(A,H)ANTHRACEN E	0.0029		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
DIBENZOFURAN	37		10 U	10 U	10 U	10 U	10 U	10 U	10 U
DIETHYL PHTHALATE	29000		10 U	10 U	10 U	10 U	10 U	10 U	10 U
DIMETHYL PHTHALATE			10 U	10 U	10 U	10 U	10 U	10 U	10 U
DI-N-BUTYL PHTHALATE	3700		10 U	10 U	10 U	10 U	10 U	10 U	10 U
DI-N-OCTYL PHTHALATE			10 U	10 U	10 U	10 U	10 U	10 U	10 U
FLUORANTHENE	1500		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
FLUORENE	1500		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HEXACHLOROBENZENE	0.042	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HEXACHLOROBUTADIENE	0.86		10 U	10 U	10 U	10 U	10 U	10 U	10 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE A-4.3
ANALYTICAL RESULTS - GROUNDWATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-MW-912-0510	TF4-MW-913-0510-AVG	TF4-MW-914-0510	TF4-MW-919-0510	TF4-MW-920-0510	TF4-MW-921-0510	TF4-MW-922-0510
			TF4-MW-912	TF4-MW-913	TF4-MW-914	TF4-MW-919	TF4-MW-920	TF4-MW-921	TF4-MW-922
			05/12/10	05/12/10	05/11/10	05/12/10	05/11/10	05/10/10	05/10/10
			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
			NM	NM	NM	NM	NM	NM	NM
HEXACHLOROCYCLOPENTADIENE	220	50	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UR	10 UR
HEXACHLOROETHANE	4.8		10 U	10 U	10 U	10 U	10 U	10 U	10 U
HIGH MOLECULAR WEIGHT PAHS			0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
INDENO(1,2,3-CD)PYRENE	0.029		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ISOPHORONE	71		10 U	10 U	10 U	10 U	10 U	10 U	10 U
LOW MOLECULAR WEIGHT PAHS			0.1 UJ	0.19 J	0.1 UJ				
NAPHTHALENE	0.14		0.1 U	0.19	0.1 U				
NITROBENZENE	0.12		10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-NITROSO-DI-N-PROPYLAMINE	0.0096		10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-NITROSODIPHENYLAMINE	14		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
PENTACHLOROPHENOL	0.56	1	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
PHENANTHRENE	1100		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
PHENOL	11000		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
PYRENE	1100		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
TOTAL CARCINOGENIC PAHS-HALFND	0.0029		0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
TOTAL CARCINOGENIC PAHS-POS	0.0029		0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
TOTAL CHLORINATED VOCS			10 U	10 U	10 U	10 U	10 U	10 U	10 U
TOTAL PAHS			0.1 UJ	0.19 J	0.1 UJ				
PESTICIDES/PCBS (UG/L)									
4,4'-DDD	0.28		0.1 U	1.55 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.2		0.1 U	1.55 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.3
ANALYTICAL RESULTS - GROUNDWATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-MW-912-0510	TF4-MW-913-0510-AVG	TF4-MW-914-0510	TF4-MW-919-0510	TF4-MW-920-0510	TF4-MW-921-0510	TF4-MW-922-0510
			TF4-MW-912	TF4-MW-913	TF4-MW-914	TF4-MW-919	TF4-MW-920	TF4-MW-921	TF4-MW-922
LOCATION ID			05/12/10	05/12/10	05/11/10	05/12/10	05/11/10	05/10/10	05/10/10
SAMPLE DATE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SACODE			NM	NM	NM	NM	NM	NM	NM
QC TYPE									
4,4'-DDT	0.2		0.1 U	1.55 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ALDRIN	0.004		0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ALPHA-BHC	0.011		0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ALPHA-CHLORDANE	0.19	2	0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
AROCLOR-1016	0.96	0.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1221	0.0068	0.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1232	0.0068	0.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1242	0.034	0.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1248	0.034	0.5	1 U	7.25 J	1 U	1 U	1 U	1 U	1 U
AROCLOR-1254	0.034	0.5	1 U	3.05 J	1 U	1 U	1 U	1 U	1 U
AROCLOR-1260	0.034	0.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1262		0.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1268		0.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BETA-BHC	0.037		0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
DELTA-BHC	0.011		0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
DIELDRIN	0.0042		0.1 U	1.55 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDOSULFAN I	220		0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ENDOSULFAN II	220		0.1 U	1.55 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDOSULFAN SULFATE	220		0.1 U	1.55 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN	11	2	0.1 U	1.55 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN ALDEHYDE	11		0.1 U	6.52 J	0.1 U				
ENDRIN KETONE	11		0.1 U	1.55 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
GAMMA-BHC (LINDANE)	0.061	0.2	0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
GAMMA-CHLORDANE	0.19	2	0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
HEPTACHLOR	0.015	0.4	0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
HEPTACHLOR EPOXIDE	0.0074	0.2	0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
METHOXYCHLOR	180	40	0.5 U	7.75 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
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TABLE A-4.3
ANALYTICAL RESULTS - GROUNDWATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-MW-912-0510	TF4-MW-913-0510-AVG	TF4-MW-914-0510	TF4-MW-919-0510	TF4-MW-920-0510	TF4-MW-921-0510	TF4-MW-922-0510
LOCATION ID			TF4-MW-912	TF4-MW-913	TF4-MW-914	TF4-MW-919	TF4-MW-920	TF4-MW-921	TF4-MW-922
SAMPLE DATE			05/12/10	05/12/10	05/11/10	05/12/10	05/11/10	05/10/10	05/10/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
TOTAL AROCLOR		0.5	1 U	10 J	1 U	1 U	1 U	1 U	1 U
TOTAL CHLORDANE			0.05 U	0.775 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
TOTAL DDD/DDE/DDT			0.1 U	1.55 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
TOXAPHENE	0.061	3	5 U	77.5 U	5 U	5 U	5 U	5 U	5 U
METALS (UG/L)									
ALUMINUM	37000		12 U	12 U	24.8 UJ	23.6 UJ	83.9 UJ	253	60.4 J
ANTIMONY	15	6	0.044 U	0.049 UJ	0.065 UJ	0.058 UJ	0.088 UJ	0.079 UJ	0.044 U
ARSENIC	0.045	10	1.6	4.45	6.3	4	0.236 U	0.236 U	0.236 U
BARIUM	7300	2000	27.4	40.8	29.5	14.9	7.9	13.9	13.1
BERYLLIUM	73	4	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.049 J	0.045 U
CADMIUM	18	5	0.054 U	0.054 U	0.054 U	0.054 U	0.234 J	0.19 UJ	0.054 U
CALCIUM			18500	20200	19700	16600	28800	11700	20000
CHROMIUM	0.043	100	0.824 UJ	0.848 UJ	0.679 UJ	0.852 UJ	1.6 UJ	1.2 UJ	1.2 UJ
COBALT	11		12.6	11.8	10.5	12.1	3.8	11.2	1.2
COPPER	1500	1300	0.428 J	1.01 J	0.284 U	0.478 J	1.1	1.1	0.723 J
IRON	26000		12300	11000	12200	17100	779	10300	252
LEAD		15	0.162 U	0.162 U	0.168 J	0.162 U	0.162 U	0.385 UJ	0.162 U
MAGNESIUM			16000	17000	11000	10400	11100	8580	9510
MANGANESE	880		1110	994	882	1130	5030	1120	321
MERCURY	0.57	2	0.056 U	0.056 U	0.056 U	0.056 U	0.056 U	0.056 UJ	0.056 UJ
NICKEL	730		36	26.3	20.4	30	64.4	67.6	9.2
POTASSIUM			1300	1120	662 J	539 J	3300	797 J	1600
SELENIUM	180	50	0.123 U	0.123 U	0.123 U	0.123 U	0.123 U	0.123 U	0.123 U
SILVER	180		0.008 U	0.011 UJ	0.008 U	0.009 UJ	0.013 UJ	0.008 U	0.008 U
SODIUM			23300	24900	10300	15600	29400	17600	21400
THALLIUM		2	0.204 U	0.204 U	0.204 U	0.204 U	0.204 U	0.204 U	0.204 U
VANADIUM	180		0.331 UJ	0.331 UJ	0.331 UJ	0.331 UJ	0.331 UJ	0.331 UJ	0.331 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.3
ANALYTICAL RESULTS - GROUNDWATER
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-MW-912-0510	TF4-MW-913-0510-AVG	TF4-MW-914-0510	TF4-MW-919-0510	TF4-MW-920-0510	TF4-MW-921-0510	TF4-MW-922-0510
LOCATION ID			TF4-MW-912	TF4-MW-913	TF4-MW-914	TF4-MW-919	TF4-MW-920	TF4-MW-921	TF4-MW-922
SAMPLE DATE			05/12/10	05/12/10	05/11/10	05/12/10	05/11/10	05/10/10	05/10/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM	NM
ZINC	11000		50.3 U	34.2 UJ	44.1 UJ	51.3 U	29.4 UJ	143	36.8 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;
 U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-902-0310-AVG	TF4-SW-903-0310	TF4-SW-904-0310	TF4-SW-905-0310	TF4-SW-906-0310
LOCATION ID			TF4-SW-901	TF4-SW-902	TF4-SW-903	TF4-SW-904	TF4-SW-905	TF4-SW-906
SAMPLE DATE			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
VOLATILES (UG/L)								
1,1,1-TRICHLOROETHANE	9100	200	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	0.067		1 U	1 UJ	1 U	1 UJ	1 UJ	1 U
1,1,2-TRICHLOROETHANE	0.24	5	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	59000		1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	2.4		1 UJ	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	340	7	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-TRICHLOROBENZENE	29		1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	2.3	70	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	0.00032	0.2	1 U	1 UJ	1 U	1 UJ	1 UJ	1 U
1,2-DIBROMOETHANE	0.0065	0.05	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROBENZENE	370	600	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	0.15	5	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	0.39	5	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE			1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	0.43	75	1 U	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	7100		5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
2-HEXANONE	47		5 U	5 U	5 U	5 U	5 U	5 U
4-METHYL-2-PENTANONE	2000		5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	22000		5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
BENZENE	0.41	5	1 U	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE			1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	0.12	80	1 U	1 U	1 U	1 U	1 U	1 U
BROMOFORM	8.5	80	1 U	1 UJ	1 U	1 UJ	1 UJ	1 U
BROMOMETHANE	8.7		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
BTEX			1 U	1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	1000		1 U	1 UJ	1 U	1 UJ	1 UJ	1 U
CARBON TETRACHLORIDE	0.44	5	1 U	1 U	1 U	1 U	1 U	1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-902-0310-AVG	TF4-SW-903-0310	TF4-SW-904-0310	TF4-SW-905-0310	TF4-SW-906-0310
LOCATION ID			TF4-SW-901	TF4-SW-902	TF4-SW-903	TF4-SW-904	TF4-SW-905	TF4-SW-906
SAMPLE DATE			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
CHLOROENZENE	91	100	1 U	1 U	1 U	1 U	1 U	1 U
CHLORODIBROMOMETHANE	0.15	80	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	21000		1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	0.19	80	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROMETHANE	190		1 U	1 U	4.8 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	370	70	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	0.43		1 U	1 U	1 U	1 U	1 U	1 U
CYCLOHEXANE	13000		1 U	1 U	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	390		1 U	1 UJ	1 U	1 UJ	1 UJ	1 U
ETHYLBENZENE	1.5	700	1 U	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	680		1 U	1 U	1 U	1 U	1 U	1 U
M+P-XYLENES		10000	1 U	1 U	1 U	1 U	1 U	1 U
METHYL ACETATE	37000		1 U	1 UJ	1 U	1 UJ	1 UJ	1 U
METHYL CYCLOHEXANE			1 U	1 U	1 U	1 U	1 U	1 U
METHYL TERT-BUTYL ETHER	12		1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	4.8	5	1 U	1 U	1 U	1 U	1 U	1 U
O-XYLENE	1200	10000	1 U	1 U	1 U	1 U	1 U	1 U
STYRENE	1600	100	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	0.11	5	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	2300	1000	1 U	1 U	1 U	1 U	1 U	1 U
TOTAL 1,2-DICHLOROETHENE	330		1 U	1 U	1 U	1 U	1 U	1 U
TOTAL CHLORINATED ETHENES			1 U	1 U	1 U	1 U	1 U	1 U
TOTAL CHLORINATED VOCS			1 UJ	1 UJ	1.14 U	1 UJ	1 UJ	1 U
TOTAL XYLENES	200	10000	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	110	100	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE			1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	2	5	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	1300		1 U	1 U	1 U	1 U	1 U	1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
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TANK FARM 4, NEWPORT, RHODE ISLAND
PAGE 3 of 14

SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-902-0310-AVG	TF4-SW-903-0310	TF4-SW-904-0310	TF4-SW-905-0310	TF4-SW-906-0310
LOCATION ID			TF4-SW-901	TF4-SW-902	TF4-SW-903	TF4-SW-904	TF4-SW-905	TF4-SW-906
SAMPLE DATE			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
VINYL CHLORIDE	0.016	2	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (UG/L)								
1,1-BIPHENYL	1800		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2,4,5-TETRACHLOROBENZENE	11		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,4-DIOXANE	6.1		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,2'-OXYBIS(1-CHLOROPROPANE)	0.32		10 U	10 U	10 U	10 U	10 U	10 U
2,3,4,6-TETRACHLOROPHENOL	1100		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4,5-TRICHLOROPHENOL	3700		20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	6.1		10 U	10 U	10 U	10 U	10 U	10 U
2,4-DICHLOROPHENOL	110		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-DIMETHYLPHENOL	730		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-DINITROPHENOL	73		20 U	20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	0.22		10 U	10 U	10 U	10 U	10 U	10 U
2,6-DINITROTOLUENE	37		10 U	10 U	10 U	10 U	10 U	10 U
2-CHLORONAPHTHALENE	2900		10 U	10 U	10 U	10 U	10 U	10 U
2-CHLOROPHENOL	180		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-METHYLNAPHTHALENE	150		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-METHYLPHENOL	1800		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-NITROANILINE	370		20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ
2-NITROPHENOL			10 U	10 U	10 U	10 U	10 U	10 U
3,3'-DICHLOROBENZIDINE	0.15		10 UR	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
3-NITROANILINE			20 U	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	2.9		20 U	20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER			10 U	10 U	10 U	10 U	10 U	10 U
4-CHLORO-3-METHYLPHENOL	3700		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-CHLOROANILINE	0.34		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-CHLOROPHENYL PHENYL ETHER			10 U	10 U	10 U	10 U	10 U	10 U
4-METHYLPHENOL	180		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-902-0310-AVG	TF4-SW-903-0310	TF4-SW-904-0310	TF4-SW-905-0310	TF4-SW-906-0310
LOCATION ID			TF4-SW-901	TF4-SW-902	TF4-SW-903	TF4-SW-904	TF4-SW-905	TF4-SW-906
SAMPLE DATE			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
4-NITROANILINE	3.4		20 U	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL			20 U	20 U	20 U	20 U	20 U	20 U
ACENAPHTHENE	2200		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ACENAPHTHYLENE	2200		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ACETOPHENONE	3700		10 U	10 U	10 U	10 U	10 U	10 U
ANTHRACENE	11000		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ATRAZINE	0.29	3	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
BENZALDEHYDE	3700		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
BENZO(A)ANTHRACENE	0.029		0.1 J	0.1 UJ	0.17 J	0.1 UJ	0.1 UJ	0.1 UJ
BENZO(A)PYRENE	0.0029	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BENZO(B)FLUORANTHENE	0.029		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BENZO(G,H,I)PERYLENE	1100		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BENZO(K)FLUORANTHENE	0.29		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BIS(2-CHLOROETHOXY)METHANE	110		10 U	10 U	10 U	10 U	10 U	10 U
BIS(2-CHLOROETHYL)ETHER	0.012		10 U	10 U	10 U	10 U	10 U	10 U
BIS(2-ETHYLHEXYL)PHTHALATE	4.8	6	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
BUTYL BENZYL PHTHALATE	35		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
CAPROLACTAM	18000		10 U	10 U	10 U	10 U	10 U	10 U
CARBAZOLE			10 U	10 U	10 U	10 U	10 U	10 U
CHRYSENE	2.9		0.1 U	0.1 U	0.11	0.1 U	0.1 U	0.1 U
DIBENZO(A,H)ANTHRACENE	0.0029		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
DIBENZOFURAN	37		10 U	10 U	10 U	10 U	10 U	10 U
DIETHYL PHTHALATE	29000		10 U	10 U	10 U	10 U	10 U	10 U
DIMETHYL PHTHALATE			10 U	10 U	10 U	10 U	10 U	10 U
DI-N-BUTYL PHTHALATE	3700		10 U	10 U	10 U	10 U	10 U	10 U
DI-N-OCTYL PHTHALATE			10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
FLUORANTHENE	1500		0.1 U	0.1 U	0.16	0.1 U	0.1 U	0.1 U
FLUORENE	1500		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-902-0310-AVG	TF4-SW-903-0310	TF4-SW-904-0310	TF4-SW-905-0310	TF4-SW-906-0310
LOCATION ID			TF4-SW-901	TF4-SW-902	TF4-SW-903	TF4-SW-904	TF4-SW-905	TF4-SW-906
SAMPLE DATE			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
HEXACHLOROBENZENE	0.042	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HEXACHLOROBUTADIENE	0.86		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
HEXACHLOROCYCLOPENTADIENE	220	50	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
HEXACHLOROETHANE	4.8		10 U	10 U	10 U	10 U	10 U	10 U
HIGH MOLECULAR WEIGHT PAHS			0.1 J	0.1 UJ	0.67 J	0.1 UJ	0.1 UJ	0.1 UJ
INDENO(1,2,3-CD)PYRENE	0.029		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ISOPHORONE	71		10 U	10 U	10 U	10 U	10 U	10 U
LOW MOLECULAR WEIGHT PAHS			0.1 U	0.1 U	0.12	0.1 U	0.1 U	0.1 U
NAPHTHALENE	0.14		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
NITROBENZENE	0.12		10 UJ	10 U	10 U	10 U	10 U	10 U
N-NITROSO-DI-N-PROPYLAMINE	0.0096		10 U	10 U	10 U	10 U	10 U	10 U
N-NITROSODIPHENYLAMINE	14		10 U	10 U	10 U	10 U	10 U	10 U
PENTACHLOROPHENOL	0.56	1	1 U	1 U	1 U	1 U	1 U	1 U
PHENANTHRENE	1100		0.1 U	0.1 U	0.12	0.1 U	0.1 U	0.1 U
PHENOL	11000		0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U
PYRENE	1100		0.1 U	0.1 U	0.23	0.1 U	0.1 U	0.1 U
TOTAL CARCINOGENIC PAHS-HALFND	0.0029		0.4 J	0.1 UJ	0.53 J	0.1 UJ	0.1 UJ	0.1 UJ
TOTAL CARCINOGENIC PAHS-POS	0.0029		0.1 J	0.1 UJ	0.28 J	0.1 UJ	0.1 UJ	0.1 UJ
TOTAL CHLORINATED VOCS			10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
TOTAL PAHS			0.1 J	0.1 UJ	0.79 J	0.1 UJ	0.1 UJ	0.1 UJ
PESTICIDES/PCBS (UG/L)								
4,4'-DDD	0.28		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.2		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.2		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ALDRIN	0.004		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ALPHA-BHC	0.011		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ALPHA-CHLORDANE	0.19	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-902-0310-AVG	TF4-SW-903-0310	TF4-SW-904-0310	TF4-SW-905-0310	TF4-SW-906-0310
LOCATION ID			TF4-SW-901	TF4-SW-902	TF4-SW-903	TF4-SW-904	TF4-SW-905	TF4-SW-906
SAMPLE DATE			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
AROCLOR-1016	0.96	0.5	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1221	0.0068	0.5	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1232	0.0068	0.5	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1242	0.034	0.5	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1248	0.034	0.5	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1254	0.034	0.5	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1260	0.034	0.5	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1262		0.5	1 U	1 U	1 U	1 U	1 U	1 U
AROCLOR-1268		0.5	1 U	1 U	1 U	1 U	1 U	1 U
BETA-BHC	0.037		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
DELTA-BHC	0.011		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
DIELDRIN	0.0042		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDOSULFAN I	220		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ENDOSULFAN II	220		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDOSULFAN SULFATE	220		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN	11	2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN ALDEHYDE	11		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN KETONE	11		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
GAMMA-BHC (LINDANE)	0.061	0.2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
GAMMA-CHLORDANE	0.19	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
HEPTACHLOR	0.015	0.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
HEPTACHLOR EPOXIDE	0.0074	0.2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
METHOXYCHLOR	180	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOTAL AROCLOR		0.5	1 U	1 U	1 U	1 U	1 U	1 U
TOTAL CHLORDANE			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
TOTAL DDD/DDE/DDT			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
TOXAPHENE	0.061	3	5 U	5 U	5 U	5 U	5 U	5 U
METALS (UG/L)								

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-902-0310-AVG	TF4-SW-903-0310	TF4-SW-904-0310	TF4-SW-905-0310	TF4-SW-906-0310
LOCATION ID			TF4-SW-901	TF4-SW-902	TF4-SW-903	TF4-SW-904	TF4-SW-905	TF4-SW-906
SAMPLE DATE			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
SACODE			NORMAL	AVG	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM	NM
ALUMINUM	37000		55.7 UJ	61 UJ	65 UJ	44 UJ	151 UJ	55.3 UJ
ANTIMONY	15	6	0.078 UJ	0.112 UJ	0.099 UJ	0.076 UJ	0.144 UJ	0.105 UJ
ARSENIC	0.045	10	0.473 J	0.46 J	0.236 U	0.236 U	0.236 U	0.236 U
BARIUM	7300	2000	10.3	10.2	5.2	9.8	9.6	10.4
BERYLLIUM	73	4	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U
CADMIUM	18	5	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U
CALCIUM			14500	14400	15800	14300	14800	14200
CHROMIUM	0.043	100	0.74 UJ	1.05 UJ	1 UJ	0.967 UJ	1 UJ	0.995 UJ
COBALT	11		0.398 J	0.418 J	0.297 J	0.404 J	0.393 J	0.413 J
COPPER	1500	1300	3.7	1.75	0.807 J	1.5	1.4	1.4
IRON	26000		284	328	270	414	545	374
LEAD		15	0.407 J	0.299 J	0.162 U	0.192 J	0.191 J	0.337 J
MAGNESIUM			4870	4830	16900	4860	4820	4810
MANGANESE	880		36.5 UJ	39.5 UJ	32.8 UJ	41.9 UJ	41.1 UJ	41.3 UJ
MERCURY	0.57	2	0.056 U	0.056 U	0.056 U	0.056 U	0.056 U	0.056 U
NICKEL	730		2.3	2.45	1.4	2.1	2.2	2.3
POTASSIUM			2990	3020	1440	2970	2930	2890
SELENIUM	180	50	0.154 J	0.19 J	0.123 U	0.214 J	0.162 J	0.162 J
SILVER	180		0.012 UJ	0.009 UJ	0.008 U	0.008 U	0.008 U	0.008 U
SODIUM			29500	29600	23400	29400	29100	28800
THALLIUM		2	0.204 U	0.204 U	0.204 U	0.204 U	0.204 U	0.204 U
VANADIUM	180		0.331 UJ	0.331 UJ	0.331 UJ	0.331 UJ	0.331 UJ	0.331 UJ
ZINC	11000		25 UJ	26.5 UJ	23.1 UJ	26.2 UJ	36.8 UJ	29 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-907-0310	TF4-SW-908-0310	TF4-SW-911-0310-AVG	TF4-SW-912-0310
LOCATION ID			TF4-SW-901	TF4-SW-907	TF4-SW-908	TF4-SW-911	TF4-SW-912
SAMPLE DATE			03/18/10	03/17/10	03/17/10	03/17/10	03/17/10
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL
QC TYPE			NM	NM	NM	NM	NM
VOLATILES (UG/L)							
1,1,1-TRICHLOROETHANE	9100	200	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	0.067		1 U	1 UJ	1 UJ	1 UJ	1 UJ
1,1,2-TRICHLOROETHANE	0.24	5	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	59000		1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	2.4		1 UJ	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	340	7	1 U	1 U	1 U	1 U	1 U
1,2,3-TRICHLOROBENZENE	29		1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	2.3	70	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	0.00032	0.2	1 U	1 UJ	1 UJ	1 UJ	1 UJ
1,2-DIBROMOETHANE	0.0065	0.05	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROBENZENE	370	600	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	0.15	5	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	0.39	5	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE			1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	0.43	75	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	7100		5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
2-HEXANONE	47		5 U	5 U	5 U	5 U	5 U
4-METHYL-2-PENTANONE	2000		5 U	5 U	5 U	5 U	5 U
ACETONE	22000		5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
BENZENE	0.41	5	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE			1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	0.12	80	1 U	1 U	1 U	1 U	1 U
BROMOFORM	8.5	80	1 U	1 UJ	1 UJ	1 UJ	1 UJ
BROMOMETHANE	8.7		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
BTEX			1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	1000		1 U	1 UJ	1 UJ	1 UJ	1 UJ
CARBON TETRACHLORIDE	0.44	5	1 U	1 U	1 U	1 U	1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-907-0310	TF4-SW-908-0310	TF4-SW-911-0310-AVG	TF4-SW-912-0310
LOCATION ID			TF4-SW-901	TF4-SW-907	TF4-SW-908	TF4-SW-911	TF4-SW-912
SAMPLE DATE			03/18/10	03/17/10	03/17/10	03/17/10	03/17/10
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL
QC TYPE			NM	NM	NM	NM	NM
CHLOROBENZENE	91	100	1 U	1 U	1 U	1 U	1 U
CHLORODIBROMOMETHANE	0.15	80	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	21000		1 U	1 U	1 U	1 U	1 U
CHLOROFORM	0.19	80	1 U	1 U	1 U	1 U	1 U
CHLOROMETHANE	190		1 U	1 U	1 U	3.2 UJ	1 U
CIS-1,2-DICHLOROETHENE	370	70	1 U	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	0.43		1 U	1 U	1 U	1 U	1 U
CYCLOHEXANE	13000		1 U	1 U	1 U	1 U	1 U
DICHLORODIFLUOROMETHANE	390		1 U	1 UJ	1 UJ	1 UJ	1 UJ
ETHYLBENZENE	1.5	700	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	680		1 U	1 U	1 U	1 U	1 U
M+P-XYLENES		10000	1 U	1 U	1 U	1 U	1 U
METHYL ACETATE	37000		1 U	1 UJ	1 UJ	1 UJ	1 UJ
METHYL CYCLOHEXANE			1 U	1 U	1 U	1 U	1 U
METHYL TERT-BUTYL ETHER	12		1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	4.8	5	1 U	1 U	1 U	1 U	1 U
O-XYLENE	1200	10000	1 U	1 U	1 U	1 U	1 U
STYRENE	1600	100	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	0.11	5	1 U	1 U	1 U	1 U	1 U
TOLUENE	2300	1000	1 U	1 U	1 U	1 U	1 U
TOTAL 1,2-DICHLOROETHENE	330		1 U	1 U	1 U	1 U	1 U
TOTAL CHLORINATED ETHENES			1 U	1 U	1 U	1 U	1 U
TOTAL CHLORINATED VOCS			1 UJ	1 UJ	1 UJ	1.08 UJ	1 UJ
TOTAL XYLENES	200	10000	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	110	100	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE			1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	2	5	1 U	1 U	1 U	1 U	1 U
TRICHLOROFLUOROMETHANE	1300		1 U	1 U	1 U	1 U	1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
PAGE 10 of 14

SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-907-0310	TF4-SW-908-0310	TF4-SW-911-0310-AVG	TF4-SW-912-0310
LOCATION ID			TF4-SW-901	TF4-SW-907	TF4-SW-908	TF4-SW-911	TF4-SW-912
SAMPLE DATE			03/18/10	03/17/10	03/17/10	03/17/10	03/17/10
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL
QC TYPE			NM	NM	NM	NM	NM
VINYL CHLORIDE	0.016	2	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (UG/L)							
1,1-BIPHENYL	1800		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2,4,5-TETRACHLOROBENZENE	11		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,4-DIOXANE	6.1		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,2'-OXYBIS(1-CHLOROPROPANE)	0.32		10 U	10 U	10 U	10 U	10 U
2,3,4,6-TETRACHLOROPHENOL	1100		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4,5-TRICHLOROPHENOL	3700		20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	6.1		10 U	10 U	10 U	10 U	10 U
2,4-DICHLOROPHENOL	110		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-DIMETHYLPHENOL	730		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-DINITROPHENOL	73		20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	0.22		10 U	10 U	10 U	10 U	10 U
2,6-DINITROTOLUENE	37		10 U	10 U	10 U	10 U	10 U
2-CHLORONAPHTHALENE	2900		10 U	10 U	10 U	10 U	10 U
2-CHLOROPHENOL	180		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-METHYLNAPHTHALENE	150		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-METHYLPHENOL	1800		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-NITROANILINE	370		20 UJ	20 U	20 U	20 U	20 U
2-NITROPHENOL			10 U	10 U	10 U	10 U	10 U
3,3'-DICHLOROBENZIDINE	0.15		10 UR	10 U	10 U	10 U	10 U
3-NITROANILINE			20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	2.9		20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER			10 U	10 U	10 U	10 U	10 U
4-CHLORO-3-METHYLPHENOL	3700		0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ
4-CHLOROANILINE	0.34		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-CHLOROPHENYL PHENYL ETHER			10 U	10 U	10 U	10 U	10 U
4-METHYLPHENOL	180		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-907-0310	TF4-SW-908-0310	TF4-SW-911-0310-AVG	TF4-SW-912-0310
LOCATION ID			TF4-SW-901	TF4-SW-907	TF4-SW-908	TF4-SW-911	TF4-SW-912
SAMPLE DATE			03/18/10	03/17/10	03/17/10	03/17/10	03/17/10
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL
QC TYPE			NM	NM	NM	NM	NM
4-NITROANILINE	3.4		20 U	20 UJ	20 UJ	20 UJ	20 UJ
4-NITROPHENOL			20 U	20 UJ	20 UJ	20 UJ	20 UJ
ACENAPHTHENE	2200		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ACENAPHTHYLENE	2200		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ACETOPHENONE	3700		10 U	10 U	10 U	10 U	10 U
ANTHRACENE	11000		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ATRAZINE	0.29	3	10 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
BENZALDEHYDE	3700		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
BENZO(A)ANTHRACENE	0.029		0.1 J	0.1 UJ	0.15 UJ	0.1 UJ	0.1 UJ
BENZO(A)PYRENE	0.0029	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BENZO(B)FLUORANTHENE	0.029		0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ
BENZO(G,H,I)PERYLENE	1100		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BENZO(K)FLUORANTHENE	0.29		0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ
BIS(2-CHLOROETHOXY)METHANE	110		10 U	10 U	10 U	10 U	10 U
BIS(2-CHLOROETHYL)ETHER	0.012		10 U	10 U	10 U	10 U	10 U
BIS(2-ETHYLHEXYL)PHTHALATE	4.8	6	10 UJ	10 U	10 U	10 U	10 U
BUTYL BENZYL PHTHALATE	35		10 UJ	10 U	10 U	10 U	10 U
CAPROLACTAM	18000		10 U	10 U	10 U	10 U	10 U
CARBAZOLE			10 U	10 U	10 U	10 U	10 U
CHRYSENE	2.9		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
DIBENZO(A,H)ANTHRACENE	0.0029		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
DIBENZOFURAN	37		10 U	10 U	10 U	10 U	10 U
DIETHYL PHTHALATE	29000		10 U	10 U	10 U	10 U	10 U
DIMETHYL PHTHALATE			10 U	10 U	10 U	10 U	10 U
DI-N-BUTYL PHTHALATE	3700		10 U	10 UJ	10 UJ	10 UJ	10 UJ
DI-N-OCTYL PHTHALATE			10 UJ	10 U	10 U	10 U	10 U
FLUORANTHENE	1500		0.1 U	0.1 U	0.14 U	0.1 U	0.1 U
FLUORENE	1500		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-907-0310	TF4-SW-908-0310	TF4-SW-911-0310-AVG	TF4-SW-912-0310
LOCATION ID			TF4-SW-901	TF4-SW-907	TF4-SW-908	TF4-SW-911	TF4-SW-912
SAMPLE DATE			03/18/10	03/17/10	03/17/10	03/17/10	03/17/10
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL
QC TYPE			NM	NM	NM	NM	NM
HEXACHLOROBENZENE	0.042	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
HEXACHLOROBUTADIENE	0.86		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
HEXACHLOROCYCLOPENTADIENE	220	50	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
HEXACHLOROETHANE	4.8		10 U	10 U	10 U	10 U	10 U
HIGH MOLECULAR WEIGHT PAHS			0.1 J	0.1 UJ	0.112 UJ	0.1 UJ	0.1 UJ
INDENO(1,2,3-CD)PYRENE	0.029		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ISOPHORONE	71		10 U	10 U	10 U	10 U	10 U
LOW MOLECULAR WEIGHT PAHS			0.1 U	0.1 U	0.111 U	0.1 U	0.1 U
NAPHTHALENE	0.14		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
NITROBENZENE	0.12		10 UJ	10 U	10 U	10 U	10 U
N-NITROSO-DI-N-PROPYLAMINE	0.0096		10 U	10 U	10 U	10 U	10 U
N-NITROSODIPHENYLAMINE	14		10 U	10 U	10 U	10 U	10 U
PENTACHLOROPHENOL	0.56	1	1 U	1 U	1 U	1 U	1 U
PHENANTHRENE	1100		0.1 U	0.1 U	0.18 U	0.1 U	0.1 U
PHENOL	11000		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
PYRENE	1100		0.1 U	0.1 U	0.13 U	0.1 U	0.1 U
TOTAL CARCINOGENIC PAHS-HALFND	0.0029		0.4 J	0.1 UJ	0.107 UJ	0.1 UJ	0.1 UJ
TOTAL CARCINOGENIC PAHS-POS	0.0029		0.1 J	0.1 UJ	0.107 UJ	0.1 UJ	0.1 UJ
TOTAL CHLORINATED VOCS			10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
TOTAL PAHS			0.1 J	0.1 UJ	0.112 UJ	0.1 UJ	0.1 UJ
PESTICIDES/PCBS (UG/L)							
4,4'-DDD	0.28		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.2		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.2		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ALDRIN	0.004		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ALPHA-BHC	0.011		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ALPHA-CHLORDANE	0.19	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-907-0310	TF4-SW-908-0310	TF4-SW-911-0310-AVG	TF4-SW-912-0310
LOCATION ID			TF4-SW-901	TF4-SW-907	TF4-SW-908	TF4-SW-911	TF4-SW-912
SAMPLE DATE			03/18/10	03/17/10	03/17/10	03/17/10	03/17/10
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL
QC TYPE			NM	NM	NM	NM	NM
AROCLOR-1016	0.96	0.5	1 U	1 U	1 U	1 UJ	1 U
AROCLOR-1221	0.0068	0.5	1 U	1 U	1 U	1 UJ	1 U
AROCLOR-1232	0.0068	0.5	1 U	1 U	1 U	1 UJ	1 U
AROCLOR-1242	0.034	0.5	1 U	1 U	1 U	1 UJ	1 U
AROCLOR-1248	0.034	0.5	1 U	1 U	1 U	1 UJ	1 U
AROCLOR-1254	0.034	0.5	1 U	1 U	1 U	1 UJ	1 U
AROCLOR-1260	0.034	0.5	1 U	1 U	1 U	1 UJ	1 U
AROCLOR-1262		0.5	1 U	1 U	1 U	1 UJ	1 U
AROCLOR-1268		0.5	1 U	1 U	1 U	1 UJ	1 U
BETA-BHC	0.037		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
DELTA-BHC	0.011		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
DIELDRIN	0.0042		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDOSULFAN I	220		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
ENDOSULFAN II	220		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDOSULFAN SULFATE	220		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN	11	2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN ALDEHYDE	11		0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
ENDRIN KETONE	11		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
GAMMA-BHC (LINDANE)	0.061	0.2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
GAMMA-CHLORDANE	0.19	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
HEPTACHLOR	0.015	0.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
HEPTACHLOR EPOXIDE	0.0074	0.2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
METHOXYCHLOR	180	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOTAL AROCLOR		0.5	1 U	1 U	1 U	1 UJ	1 U
TOTAL CHLORDANE			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
TOTAL DDD/DDE/DDT			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
TOXAPHENE	0.061	3	5 U	5 U	5 U	5 U	5 U
METALS (UG/L)							

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.4
ANALYTICAL RESULTS - SURFACE WATER
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL for Tapwater	Federal MCL	TF4-SW-901-0310	TF4-SW-907-0310	TF4-SW-908-0310	TF4-SW-911-0310-AVG	TF4-SW-912-0310
LOCATION ID			TF4-SW-901	TF4-SW-907	TF4-SW-908	TF4-SW-911	TF4-SW-912
SAMPLE DATE			03/18/10	03/17/10	03/17/10	03/17/10	03/17/10
SACODE			NORMAL	NORMAL	NORMAL	AVG	NORMAL
QC TYPE			NM	NM	NM	NM	NM
ALUMINUM	37000		55.7 UJ	186 UJ	76.6 UJ	68.2 UJ	48.4 UJ
ANTIMONY	15	6	0.078 UJ	0.121 UJ	0.091 UJ	0.0905 UJ	0.067 UJ
ARSENIC	0.045	10	0.473 J	0.465 J	0.236 U	0.19 J	0.236 U
BARIUM	7300	2000	10.3	10	10.2	9.85	7.2
BERYLLIUM	73	4	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U
CADMIUM	18	5	0.054 U	0.054 U	0.054 U	0.054 U	0.054 U
CALCIUM			14500	10400	14200	14000	15200
CHROMIUM	0.043	100	0.74 UJ	1.1 UJ	1 UJ	1.1 UJ	1 UJ
COBALT	11		0.398 J	0.931 J	0.469 J	0.42 J	0.383 J
COPPER	1500	1300	3.7	2.9	1.8	2.25	1.1
IRON	26000		284	513	351	330	307
LEAD		15	0.407 J	0.928 J	0.398 J	0.308 J	0.162 U
MAGNESIUM			4870	3480	4720	4630	13700
MANGANESE	880		36.5 UJ	68.7 U	43.3 UJ	38.8 UJ	48.5 UJ
MERCURY	0.57	2	0.056 U	0.056 U	0.056 U	0.056 U	0.056 U
NICKEL	730		2.3	3.5	2.4	2.55	1.7
POTASSIUM			2990	2420	3070	3020	1860
SELENIUM	180	50	0.154 J	0.229 J	0.231 J	0.22 J	0.227 J
SILVER	180		0.012 UJ	0.008 U	0.008 U	0.008 U	0.008 U
SODIUM			29500	24400	30600	30500	25200
THALLIUM		2	0.204 U	0.204 U	0.204 U	0.204 U	0.204 U
VANADIUM	180		0.331 UJ	0.331 UJ	0.331 UJ	0.331 UJ	0.331 UJ
ZINC	11000		25 UJ	38.1 UJ	32.5 UJ	25.6 UJ	24.5 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-902-0006	TF4-SD-903-0006	TF4-SD-904-0006	TF4-SD-905-0006
LOCATION ID				AVG			
SAMPLE DATE			TF4-SD-901	TF4-SD-902	TF4-SD-903	TF4-SD-904	TF4-SD-905
TOP DEPTH			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
BOTTOM DEPTH			0 FT				
SACODE			0.5 FT				
QC TYPE			NORMAL	AVG	NORMAL	NORMAL	NORMAL
			NM	NM	NM	NM	NM
VOLATILES (UG/KG)							
1,1,1-TRICHLOROETHANE	8700000	38000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
1,1,2,2-TETRACHLOROETHANE	560	2800	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
1,1,2-TRICHLOROETHANE	1100	5300	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
1,1-DICHLOROETHANE	3300	17000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
1,1-DICHLOROETHENE	240000	1100000	7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
1,2,3-TRICHLOROBENZENE	49000	490000	7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
1,2,4-TRICHLOROBENZENE	22000	99000	7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
1,2-DIBROMOETHANE	34	170	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
1,2-DICHLOROBENZENE	1900000	9800000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
1,2-DICHLOROETHANE	430	2200	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
1,2-DICHLOROPROPANE	890	4500	7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
1,3-DICHLOROBENZENE			7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
1,4-DICHLOROBENZENE	2400	12000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
2-BUTANONE	28000000	200000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
2-HEXANONE	210000	1400000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
4-METHYL-2-PENTANONE	5300000	53000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
ACETONE	61000000	630000000	90 J	5.45 UJ	150	16	81
BENZENE	1100	5400	7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
BROMOCHLOROMETHANE			7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
BROMODICHLOROMETHANE	270	1400	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
BROMOFORM	61000	220000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
BROMOMETHANE	7300	32000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
BTEX			7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
CARBON DISULFIDE	820000	3700000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-902-0006	TF4-SD-903-0006	TF4-SD-904-0006	TF4-SD-905-0006
LOCATION ID				AVG			
SAMPLE DATE			TF4-SD-901	TF4-SD-902	TF4-SD-903	TF4-SD-904	TF4-SD-905
TOP DEPTH			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
BOTTOM DEPTH			0 FT				
SACODE			0.5 FT				
QC TYPE			NORMAL	AVG	NORMAL	NORMAL	NORMAL
			NM	NM	NM	NM	NM
CARBON TETRACHLORIDE	610	3000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
CHLOROBENZENE	290000	1400000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
CHLORODIBROMOMETHANE	680	3300	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
CHLOROETHANE	15000000	61000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
CHLOROFORM	290	1500	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
CHLOROMETHANE	120000	500000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
CIS-1,2-DICHLOROETHENE	780000	10000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
CIS-1,3-DICHLOROPROPENE	1700	8100	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
CYCLOHEXANE	7000000	29000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
DICHLORODIFLUOROMETHANE	180000	780000	7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
ETHYLBENZENE	5400	27000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
ISOPROPYLBENZENE	2100000	11000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
M+P-XYLENES			7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
METHYL ACETATE	78000000	1000000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
METHYL CYCLOHEXANE			7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
METHYL TERT-BUTYL ETHER	43000	220000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
METHYLENE CHLORIDE	11000	53000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
O-XYLENE	3800000	19000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
STYRENE	6300000	36000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
TETRACHLOROETHENE	550	2600	7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
TOLUENE	5000000	45000000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
TOTAL 1,2-DICHLOROETHENE	700000	9200000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
TOTAL CHLORINATED ETHENES			7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
TOTAL CHLORINATED VOCS			7.2 UJ	5.45 UJ	9.6 UJ	5.1 UJ	7.8 UJ
TOTAL XYLENES	630000	2700000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
TRANS-1,2-DICHLOROETHENE	150000	690000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
TRANS-1,3-DICHLOROPROPENE	1700	8100	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-902-0006	TF4-SD-903-0006	TF4-SD-904-0006	TF4-SD-905-0006
LOCATION ID				AVG			
SAMPLE DATE			TF4-SD-901	TF4-SD-902	TF4-SD-903	TF4-SD-904	TF4-SD-905
TOP DEPTH			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
BOTTOM DEPTH			0 FT				
SACODE			0.5 FT				
QC TYPE			NORMAL	AVG	NORMAL	NORMAL	NORMAL
			NM	NM	NM	NM	NM
TRICHLOROETHENE	2800	14000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
TRICHLOROFLUOROMETHANE	790000	3400000	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
VINYL CHLORIDE	60	1700	7.2 UJ	5.45 UJ	9.6 U	5.1 U	7.8 U
SEMIVOLATILES (UG/KG)							
1,1-BIPHENYL	3900000	51000000	330 U				
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 U				
1,4-DIOXANE	44000	160000	3.3 U				
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 U				
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U				
2,4,6-TRICHLOROPHENOL	44000	160000	330 U				
2,4-DICHLOROPHENOL	180000	1800000	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
2,4-DIMETHYLPHENOL	1200000	12000000	3.3 U				
2,4-DINITROPHENOL	120000	1200000	670 U				
2,4-DINITROTOLUENE	1600	5500	330 U				
2,6-DINITROTOLUENE	61000	620000	330 U				
2-CHLORONAPHTHALENE	6300000	82000000	330 U				
2-CHLOROPHENOL	390000	5100000	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
2-METHYLNAPHTHALENE	310000	4100000	3.3 U	4.62 J	10	3.3 U	4.2
2-METHYLPHENOL	3100000	31000000	10 J	3.3 UJ	3.3 UJ	3.3 UJ	3.3 UJ
2-NITROANILINE	610000	6000000	670 U				
2-NITROPHENOL			330 U				
3,3'-DICHLOROBENZIDINE	1100	3800	330 U				
3-NITROANILINE			670 U				
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 U				
4-BROMOPHENYL PHENYL ETHER			330 U				

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED; U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-902-0006	TF4-SD-903-0006	TF4-SD-904-0006	TF4-SD-905-0006
LOCATION ID				AVG			
SAMPLE DATE			TF4-SD-901	TF4-SD-902	TF4-SD-903	TF4-SD-904	TF4-SD-905
TOP DEPTH			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
BOTTOM DEPTH			0 FT				
SACODE			0.5 FT				
QC TYPE			NORMAL	AVG	NORMAL	NORMAL	NORMAL
			NM	NM	NM	NM	NM
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U				
4-CHLOROANILINE	2400	8600	330 UJ				
4-CHLOROPHENYL PHENYL ETHER			330 U				
4-METHYLPHENOL	310000	3100000	3.3 U	3.3 U	5.9	16	10
4-NITROANILINE	24000	86000	670 U				
4-NITROPHENOL			670 UJ				
ACENAPHTHENE	3400000	33000000	3.3 U	3.3 U	8.9	3.3 U	19
ACENAPHTHYLENE	3400000	33000000	4.7	3.3 U	28	3.3 U	4.9
ACETOPHENONE	7800000	100000000	330 U				
ANTHRACENE	17000000	170000000	11	7.85	120	8.5	61
ATRAZINE	2100	7500	3.3 UJ				
BENZALDEHYDE	7800000	100000000	330 UJ	330 UJ	170 J	330 UJ	330 UJ
BENZO(A)ANTHRACENE	150	2100	46 J	27 J	200 J	34 J	100 J
BENZO(A)PYRENE	15	210	61 J	23.5 J	210	49	120
BENZO(B)FLUORANTHENE	150	2100	67 J	25 J	240 J	61 J	130 J
BENZO(G,H,I)PERYLENE	1700000	17000000	49 J	19.5	150	39	92
BENZO(K)FLUORANTHENE	1500	21000	68	33 J	200	51	130
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 U				
BIS(2-CHLOROETHYL)ETHER	210	1000	330 U				
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	120 J	330 U	210 J	41 J	57 J
BUTYL BENZYL PHTHALATE	260000	910000	330 U				
CAPROLACTAM	31000000	310000000	330 U				
CARBAZOLE			330 U				
CHRYSENE	15000	210000	78 J	35.5 J	290 J	53 J	130 J
DIBENZO(A,H)ANTHRACENE	15	210	13 J	6.6 J	53	11	30
DIBENZOFURAN	78000	1000000	330 U				
DIETHYL PHTHALATE	49000000	490000000	330 U				

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

**TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-902-0006	TF4-SD-903-0006	TF4-SD-904-0006	TF4-SD-905-0006
LOCATION ID				AVG			
SAMPLE DATE			TF4-SD-901	TF4-SD-902	TF4-SD-903	TF4-SD-904	TF4-SD-905
TOP DEPTH			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
BOTTOM DEPTH			0 FT				
SACODE			0.5 FT				
QC TYPE			NORMAL	AVG	NORMAL	NORMAL	NORMAL
			NM	NM	NM	NM	NM
DIMETHYL PHTHALATE			330 U				
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U				
DI-N-OCTYL PHTHALATE			330 U				
FLUORANTHENE	2300000	22000000	110 J	49.5 J	330	86	230
FLUORENE	2300000	22000000	5.4	4.2	3.3 U	3.9	24
HEXACHLOROBENZENE	300	1100	3.3 U				
HEXACHLOROBUTADIENE	6200	22000	330 U				
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 U				
HEXACHLOROETHANE	35000	120000	330 U				
HIGH MOLECULAR WEIGHT PAHS			614 J	278 J	2050 J	484 J	1220 J
INDENO(1,2,3-CD)PYRENE	150	2100	39 J	16.5 J	120	34	80
ISOPHORONE	510000	1800000	330 U				
LOW MOLECULAR WEIGHT PAHS			82.2	44.8 J	343	54.4	309
NAPHTHALENE	3600	18000	4.1	3.3 U	6	3.3 U	5.8
NITROBENZENE	4800	24000	330 U				
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 U				
N-NITROSODIPHENYLAMINE	99000	350000	330 U				
PENTACHLOROPHENOL	3000	9000	33 UJ				
PHENANTHRENE	1700000	17000000	57	29 J	170	42	190
PHENOL	18000000	180000000	3.3 U	3.3 U	3.3 U	3.3 U	15
PYRENE	1700000	17000000	83	41.5	260	66	180
TOTAL CARCINOGENIC PAHS-HALFND	15	210	372 J	168 J	1310 J	293 J	720 J
TOTAL CARCINOGENIC PAHS-POS	15	210	372 J	168 J	1310 J	293 J	720 J
TOTAL CHLORINATED VOCS			330 U				
TOTAL PAHS			696 J	322 J	2400 J	538 J	1530 J
PESTICIDES/PCBS (UG/KG)							

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-902-0006	TF4-SD-903-0006	TF4-SD-904-0006	TF4-SD-905-0006
LOCATION ID				AVG			
SAMPLE DATE			TF4-SD-901	TF4-SD-902	TF4-SD-903	TF4-SD-904	TF4-SD-905
TOP DEPTH			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
BOTTOM DEPTH			0 FT				
SACODE			0.5 FT				
QC TYPE			NORMAL	AVG	NORMAL	NORMAL	NORMAL
			NM	NM	NM	NM	NM
4,4'-DDD	2000	7200	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
4,4'-DDE	1400	5100	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
4,4'-DDT	1700	7000	3.3 U				
ALDRIN	29	100	1.7 U				
ALPHA-BHC	77	270	1.7 U				
ALPHA-CHLORDANE	1600	6500	1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
AROCLOR-1016	3900	21000	33 U				
AROCLOR-1221	140	540	33 U				
AROCLOR-1232	140	540	33 U				
AROCLOR-1242	220	740	33 U				
AROCLOR-1248	220	740	33 U				
AROCLOR-1254	220	740	33 U				
AROCLOR-1260	220	740	33 U				
AROCLOR-1262			33 U				
AROCLOR-1268			33 U				
BETA-BHC	270	960	1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
DELTA-BHC	77	270	1.7 U				
DIELDRIN	30	110	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
ENDOSULFAN I	370000	3700000	1.7 U				
ENDOSULFAN II	370000	3700000	3.3 U				
ENDOSULFAN SULFATE	370000	3700000	3.3 U				
ENDRIN	18000	180000	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
ENDRIN ALDEHYDE	18000	180000	3.3 U				
ENDRIN KETONE	18000	180000	3.3 U	20.8 J	3.3 U	3.3 U	3.3 U
GAMMA-BHC (LINDANE)	520	2100	1.7 U				
GAMMA-CHLORDANE	1600	6500	1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
HEPTACHLOR	110	380	1.7 U				

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-902-0006	TF4-SD-903-0006	TF4-SD-904-0006	TF4-SD-905-0006
LOCATION ID				AVG			
SAMPLE DATE			TF4-SD-901	TF4-SD-902	TF4-SD-903	TF4-SD-904	TF4-SD-905
TOP DEPTH			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
BOTTOM DEPTH			0 FT				
SACODE			0.5 FT				
QC TYPE			NORMAL	AVG	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	NM	NM	NM		
HEPTACHLOR EPOXIDE	53	190	1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
METHOXYCHLOR	310000	3100000	17 U				
TOTAL AROCLOR	220	740	33 U				
TOTAL CHLORDANE			1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
TOTAL DDD/DDE/DDT			3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
TOXAPHENE	440	1600	170 U				
METALS (MG/KG)							
ALUMINUM	77000	990000	6470	6650	10100	6280	7790
ANTIMONY	31	410	0.19 UJ	0.155 UJ	0.28 UJ	0.21 UJ	0.25 UJ
ARSENIC	0.39	1.6	10.8	11.2	13.5 J	9.2	11.1 J
BARIUM	15000	190000	19 J	16.6 J	63.9 J	17 J	27.3 J
BERYLLIUM	160	2000	0.37 J	0.295 J	0.6 J	0.31 J	0.37 J
CADMIUM	70	800	0.24 J	0.285	0.68	0.34	0.27 J
CALCIUM			509 J	494 J	1080 J	614 J	1200 J
CHROMIUM	0.29	5.6	11.2 J	29.2 J	12.6 J	11.5 J	12.3 J
COBALT	23	300	9.5	9.4	33.7	10.1	13.5
COPPER	3100	41000	11.9	9.8	19.4	12.3	13.5
IRON	55000	720000	25000	26400	55600	21700	29400
LEAD	400	800	21.6 J	96.2 J	37.6 J	19.9 J	25.3 J
MAGNESIUM			1920	2060	1930	2280	2480
MANGANESE	1800	23000	301	310	3440	171	736
MERCURY	5.6	34	0.047 J	0.0325 J	0.07 J	0.055	0.051 J
NICKEL	1500	20000	16.3	17.6	50.4	20.8	22.7
POTASSIUM			216	166 J	372	187	241
SELENIUM	390	5100	2.7 UJ	2.7 UJ	6.2 UJ	2.2 UJ	3 UJ
SILVER	390	5100	0.083 U	0.068 U	0.12 J	0.094 U	0.094 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-902-0006	TF4-SD-903-0006	TF4-SD-904-0006	TF4-SD-905-0006
LOCATION ID				AVG			
SAMPLE DATE			TF4-SD-901	TF4-SD-902	TF4-SD-903	TF4-SD-904	TF4-SD-905
TOP DEPTH			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
BOTTOM DEPTH			0 FT				
SACODE			0.5 FT				
QC TYPE			NORMAL	AVG	NORMAL	NORMAL	NORMAL
			NM	NM	NM	NM	NM
SODIUM			23.9 J	40.8 J	145	33 J	50.6 J
THALLIUM			0.85 J	0.45 J	11.5	0.29 U	2.4
VANADIUM	390	5200	13.6	12.3	22.3	11.4	14.4
ZINC	23000	310000	65.5	71.4	161	69.3	79.3
MISCELLANEOUS PARAMETERS (S.U.)							
PH			5	5.8	6	5.9	5.9
MISCELLANEOUS PARAMETERS (MG/KG)							
TOTAL ORGANIC CARBON			22000	15000	46000	18000	22000
DIOXINS/FURANS (NG/KG)							
1,2,3,4,6,7,8,9-OCDD	15000	60000	6190 J	852	2910 J	2290 J	507
1,2,3,4,6,7,8,9-OCDF	15000	60000	169 J	3.63	8.03 J	31.2	7.42 J
1,2,3,4,6,7,8-HPCDD	450	1800	203 J	19.4	75.1	86.1	20.6
1,2,3,4,6,7,8-HPCDF	450	1800	24.7 J	1.62 J	2.74 J	12.6 U	3.6 J
1,2,3,4,7,8,9-HPCDF	450	1800	2.65 J	0.208 U	0.242 U	0.941 J	0.229 UJ
1,2,3,4,7,8-HXCDD	45	180	1.74 J	0.236 J	0.497 J	1.14 J	0.259 J
1,2,3,4,7,8-HXCDF	45	180	1.34 J	0.206 J	0.429 J	0.796 J	0.278 J
1,2,3,6,7,8-HXCDD	45	180	4.7	0.652 J	1.09 J	2.93 J	0.862 J
1,2,3,6,7,8-HXCDF	45	180	1.16 J	0.176 J	0.246 J	0.727 J	0.211 J
1,2,3,7,8,9-HXCDD	45	180	4.07 J	0.475 J	1.26 J	3.12 J	0.789 U
1,2,3,7,8,9-HXCDF	45	180	0.332 U	0.0336 U	0.0644 U	0.136 U	0.15 U
1,2,3,7,8-PECDD	4.5	18	0.83 J	0.154 J	0.225 J	0.665 J	0.201 J
1,2,3,7,8-PECDF	150	600	0.272 J	0.0854 J	0.0309 U	0.238 J	0.0762 J
2,3,4,6,7,8-HXCDF	45	180	1.13 J	0.116 J	0.301 J	0.477 J	0.201 J
2,3,4,7,8-PECDF	15	60	0.261 J	0.0426 J	0.204 J	0.193 J	0.0608 J
2,3,7,8-TCDD	4.5	18	0.0398 U	0.0258 J	0.0234 U	0.0966 J	0.0278 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-902-0006	TF4-SD-903-0006	TF4-SD-904-0006	TF4-SD-905-0006
LOCATION ID				AVG			
SAMPLE DATE			TF4-SD-901	TF4-SD-902	TF4-SD-903	TF4-SD-904	TF4-SD-905
TOP DEPTH			03/18/10	03/18/10	03/18/10	03/18/10	03/18/10
BOTTOM DEPTH			0 FT				
SACODE			0.5 FT				
QC TYPE			NORMAL	AVG	NORMAL	NORMAL	NORMAL
			NM	NM	NM	NM	NM
2,3,7,8-TCDF	45	180	0.536 J	0.202 J	0.424 J	0.108 UJ	0.0581 U
TEQ BIRD	4.5	18	3.67 J	0.646 J	1.51 J	1.9 J	0.468 J
TEQ BIRD HALFND	4.5	18	3.71 J	0.673 J	1.52 J	2.03 J	0.559 J
TEQ FISH	4.5	18	3.43 J	0.508 J	1.11 J	2.03 J	0.55 J
TEQ FISH HALFND	4.5	18	3.47 J	0.519 J	1.13 J	2.1 J	0.578 J
TEQ MAMMAL	4.5	18	6.6 J	0.85 J	2.36 J	3.31 J	0.799 J
TEQ MAMMAL HALFND	4.5	18	6.63 J	0.871 J	2.38 J	3.39 J	0.864 J
TOTAL HPCDD			363	37.2	155	165	39
TOTAL HPCDF			104	4.36	8.53	33.8	8.9
TOTAL HXCDD			32.3	4.49	11.4	23.4	5.66
TOTAL HXCDF			20	2.8 J	3.99 J	17.6	4.55
TOTAL PECDD			4.38	0.398 J	1.5 J	3.08 J	0.768 J
TOTAL PECDF			12	2.26 J	4.01 J	9.59	1.9 J
TOTAL TCDD			0.421 J	0.0337 J	0.0234 U	0.623 J	0.0278 U
TOTAL TCDF			5.59	2.07	4.12	3.84	1.67 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-906-0006	TF4-SD-907-0006	TF4-SD-908-0006	TF4-SD-909-0006
LOCATION ID			TF4-SD-901	TF4-SD-906	TF4-SD-907	TF4-SD-908	TF4-SD-909
SAMPLE DATE			03/18/10	03/18/10	03/17/10	03/17/10	03/17/10
TOP DEPTH			0 FT				
BOTTOM DEPTH			0.5 FT				
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM
VOLATILES (UG/KG)							
1,1,1-TRICHLOROETHANE	8700000	38000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,1,2,2-TETRACHLOROETHANE	560	2800	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,1,2-TRICHLOROETHANE	1100	5300	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,1-DICHLOROETHANE	3300	17000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,1-DICHLOROETHENE	240000	1100000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,2,3-TRICHLOROBENZENE	49000	490000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,2,4-TRICHLOROBENZENE	22000	99000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,2-DIBROMOETHANE	34	170	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,2-DICHLOROBENZENE	1900000	9800000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,2-DICHLOROETHANE	430	2200	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,2-DICHLOROPROPANE	890	4500	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,3-DICHLOROBENZENE			7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
1,4-DICHLOROBENZENE	2400	12000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
2-BUTANONE	28000000	200000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
2-HEXANONE	210000	1400000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
4-METHYL-2-PENTANONE	5300000	53000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
ACETONE	61000000	630000000	90 J	55 J	240 J	4.3 UJ	16 J
BENZENE	1100	5400	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
BROMOCHLOROMETHANE			7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
BROMODICHLOROMETHANE	270	1400	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
BROMOFORM	61000	220000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
BROMOMETHANE	7300	32000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
BTEX			7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
CARBON DISULFIDE	820000	3700000	7.2 UJ	1.9 J	8 UJ	4.3 UJ	8.9 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-906-0006	TF4-SD-907-0006	TF4-SD-908-0006	TF4-SD-909-0006
LOCATION ID			TF4-SD-901	TF4-SD-906	TF4-SD-907	TF4-SD-908	TF4-SD-909
SAMPLE DATE			03/18/10	03/18/10	03/17/10	03/17/10	03/17/10
TOP DEPTH			0 FT				
BOTTOM DEPTH			0.5 FT				
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM
CARBON TETRACHLORIDE			610	3000	7.2 UJ	7.2 UJ	8 UJ
CHLOROBENZENE	290000	1400000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
CHLORODIBROMOMETHANE	680	3300	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
CHLOROETHANE	15000000	61000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
CHLOROFORM	290	1500	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
CHLOROMETHANE	120000	500000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
CIS-1,2-DICHLOROETHENE	780000	10000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
CIS-1,3-DICHLOROPROPENE	1700	8100	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
CYCLOHEXANE	7000000	29000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
DICHLORODIFLUOROMETHANE	180000	780000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
ETHYLBENZENE	5400	27000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
ISOPROPYLBENZENE	2100000	11000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
M+P-XYLENES			7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
METHYL ACETATE	78000000	1000000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
METHYL CYCLOHEXANE			7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
METHYL TERT-BUTYL ETHER	43000	220000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
METHYLENE CHLORIDE	11000	53000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
O-XYLENE	3800000	19000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
STYRENE	6300000	36000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
TETRACHLOROETHENE	550	2600	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
TOLUENE	5000000	45000000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
TOTAL 1,2-DICHLOROETHENE	700000	9200000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
TOTAL CHLORINATED ETHENES			7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
TOTAL CHLORINATED VOCS			7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
TOTAL XYLENES	630000	2700000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
TRANS-1,2-DICHLOROETHENE	150000	690000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
TRANS-1,3-DICHLOROPROPENE	1700	8100	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED; U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-906-0006	TF4-SD-907-0006	TF4-SD-908-0006	TF4-SD-909-0006
LOCATION ID			TF4-SD-901	TF4-SD-906	TF4-SD-907	TF4-SD-908	TF4-SD-909
SAMPLE DATE			03/18/10	03/18/10	03/17/10	03/17/10	03/17/10
TOP DEPTH			0 FT				
BOTTOM DEPTH			0.5 FT				
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM
TRICHLOROETHENE	2800	14000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
TRICHLOROFLUOROMETHANE	790000	3400000	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
VINYL CHLORIDE	60	1700	7.2 UJ	7.2 UJ	8 UJ	4.3 UJ	8.9 UJ
SEMIVOLATILES (UG/KG)							
1,1-BIPHENYL	3900000	51000000	330 U	1300 U	330 U	330 U	330 U
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 U	13 U	3.3 U	3.3 U	3.3 U
1,4-DIOXANE	44000	160000	3.3 U	13 U	3.3 U	3.3 U	3.3 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 U	1300 U	330 U	330 U	330 U
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 UJ	13 U	3.3 U	3.3 U	3.3 U
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	2700 U	670 U	670 U	670 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 U	1300 U	330 U	330 U	330 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 UJ	13 U	3.3 U	3.3 U	3.3 U
2,4-DIMETHYLPHENOL	1200000	12000000	3.3 U	13 U	3.3 U	3.3 U	3.3 U
2,4-DINITROPHENOL	120000	1200000	670 U	2700 U	670 U	670 U	670 U
2,4-DINITROTOLUENE	1600	5500	330 U	1300 U	330 U	330 U	330 U
2,6-DINITROTOLUENE	61000	620000	330 U	1300 U	330 U	330 U	330 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	1300 U	330 U	330 U	330 U
2-CHLOROPHENOL	390000	5100000	3.3 UJ	13 U	3.3 U	3.3 U	3.3 U
2-METHYLNAPHTHALENE	310000	4100000	3.3 U	13 U	3.3 U	3.3 U	3.3 U
2-METHYLPHENOL	3100000	31000000	10 J	13 UJ	3.3 UJ	3.3 UJ	3.3 UJ
2-NITROANILINE	610000	6000000	670 U	2700 U	670 U	670 U	670 U
2-NITROPHENOL			330 U	1300 U	330 U	330 U	330 U
3,3'-DICHLOROBENZIDINE	1100	3800	330 U	1300 U	330 U	330 U	330 U
3-NITROANILINE			670 U	2700 U	670 U	670 U	670 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 U	2700 U	670 U	670 U	670 U
4-BROMOPHENYL PHENYL ETHER			330 U	1300 U	330 U	330 U	330 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED; U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-906-0006	TF4-SD-907-0006	TF4-SD-908-0006	TF4-SD-909-0006
LOCATION ID			TF4-SD-901	TF4-SD-906	TF4-SD-907	TF4-SD-908	TF4-SD-909
SAMPLE DATE			03/18/10	03/18/10	03/17/10	03/17/10	03/17/10
TOP DEPTH			0 FT				
BOTTOM DEPTH			0.5 FT				
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM
4-CHLORO-3-METHYLPHENOL			6100000	62000000	3.3 U	13 U	3.3 U
4-CHLOROANILINE	2400	8600	330 UJ	1300 UJ	330 UJ	330 UJ	330 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	1300 U	330 U	330 U	330 U
4-METHYLPHENOL	310000	3100000	3.3 U	13 U	5	3.3 U	3.3 U
4-NITROANILINE	24000	86000	670 U	2700 U	670 U	670 U	670 U
4-NITROPHENOL			670 UJ	2700 UJ	670 UJ	670 UJ	670 UJ
ACENAPHTHENE	3400000	33000000	3.3 U	13 U	6.5	3.3 U	3.3 U
ACENAPHTHYLENE	3400000	33000000	4.7	13 U	10	3.3 U	5.3
ACETOPHENONE	7800000	100000000	330 U	1300 U	330 U	330 U	330 U
ANTHRACENE	17000000	170000000	11	15	28	6.2	8.3
ATRAZINE	2100	7500	3.3 UJ	13 UJ	3.3 UJ	3.3 UJ	3.3 UJ
BENZALDEHYDE	7800000	100000000	330 UJ	1300 UJ	64 J	330 UJ	330 UJ
BENZO(A)ANTHRACENE	150	2100	46 J	66 J	130 J	26 J	32 J
BENZO(A)PYRENE	15	210	61 J	73	140	34	44
BENZO(B)FLUORANTHENE	150	2100	67 J	76 J	170 J	41 J	50 J
BENZO(G,H,I)PERYLENE	1700000	17000000	49 J	55	130	27	32
BENZO(K)FLUORANTHENE	1500	21000	68	71	200	43	42
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 U	1300 U	330 U	330 U	330 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 U	1300 U	330 U	330 U	330 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	120 J	1300 U	220 J	35 J	330 U
BUTYL BENZYL PHTHALATE	260000	910000	330 U	1300 U	330 U	330 U	330 U
CAPROLACTAM	31000000	310000000	330 U	1300 U	330 U	330 U	330 U
CARBAZOLE			330 U	1300 U	330 U	330 U	330 U
CHRYSENE	15000	210000	78 J	70 J	160 J	40 J	48 J
DIBENZO(A,H)ANTHRACENE	15	210	13 J	14	36	8.2	13
DIBENZOFURAN	78000	1000000	330 U	1300 U	330 U	330 U	330 U
DIETHYL PHTHALATE	49000000	490000000	330 U	1300 U	330 U	330 U	330 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-906-0006	TF4-SD-907-0006	TF4-SD-908-0006	TF4-SD-909-0006
LOCATION ID			TF4-SD-901	TF4-SD-906	TF4-SD-907	TF4-SD-908	TF4-SD-909
SAMPLE DATE			03/18/10	03/18/10	03/17/10	03/17/10	03/17/10
TOP DEPTH			0 FT				
BOTTOM DEPTH			0.5 FT				
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM
DIMETHYL PHTHALATE			330 U	1300 U	330 U	330 U	330 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	1300 U	330 U	330 U	330 U
DI-N-OCTYL PHTHALATE			330 U	1300 U	330 U	330 U	330 U
FLUORANTHENE	2300000	22000000	110 J	130	260	69	73
FLUORENE	2300000	22000000	5.4	13 U	10	3.3 U	4
HEXACHLOROBENZENE	300	1100	3.3 U	13 U	3.3 U	3.3 U	3.3 U
HEXACHLOROBUTADIENE	6200	22000	330 U	1300 U	330 U	330 U	330 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 U	1300 U	330 U	330 U	330 U
HEXACHLOROETHANE	35000	120000	330 U	1300 U	330 U	330 U	330 U
HIGH MOLECULAR WEIGHT PAHS			614 J	701 J	1550 J	366 J	422 J
INDENO(1,2,3-CD)PYRENE	150	2100	39 J	46	110	23	28
ISOPHORONE	510000	1800000	330 U	1300 U	330 U	330 U	330 U
LOW MOLECULAR WEIGHT PAHS			82.2	76	200	44.5	59.1
NAPHTHALENE	3600	18000	4.1	13 U	5	5.3	5.5
NITROBENZENE	4800	24000	330 U	1300 U	330 UJ	330 U	330 U
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 U	1300 U	330 U	330 U	330 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	1300 U	330 U	330 U	330 U
PENTACHLOROPHENOL	3000	9000	33 UJ	130 UJ	33 UJ	33 UJ	33 UJ
PHENANTHRENE	1700000	17000000	57	61	140	33	36
PHENOL	18000000	180000000	3.3 U	13 U	4.8	3.3 U	3.3 U
PYRENE	1700000	17000000	83	100	210	55	60
TOTAL CARCINOGENIC PAHS-HALFND	15	210	372 J	416 J	946 J	215 J	257 J
TOTAL CARCINOGENIC PAHS-POS	15	210	372 J	416 J	946 J	215 J	257 J
TOTAL CHLORINATED VOCS			330 U	1300 U	330 U	330 U	330 U
TOTAL PAHS			696 J	777 J	1750 J	411 J	481 J
PESTICIDES/PCBS (UG/KG)							

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-906-0006	TF4-SD-907-0006	TF4-SD-908-0006	TF4-SD-909-0006
LOCATION ID			TF4-SD-901	TF4-SD-906	TF4-SD-907	TF4-SD-908	TF4-SD-909
SAMPLE DATE			03/18/10	03/18/10	03/17/10	03/17/10	03/17/10
TOP DEPTH			0 FT				
BOTTOM DEPTH			0.5 FT				
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM
4,4'-DDD	2000	7200	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
4,4'-DDE	1400	5100	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
4,4'-DDT	1700	7000	3.3 U				
ALDRIN	29	100	1.7 U				
ALPHA-BHC	77	270	1.7 U				
ALPHA-CHLORDANE	1600	6500	1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
AROCLOR-1016	3900	21000	33 U	33 U	33 UJ	33 U	33 U
AROCLOR-1221	140	540	33 U	33 U	33 UJ	33 U	33 U
AROCLOR-1232	140	540	33 U	33 U	33 UJ	33 U	33 U
AROCLOR-1242	220	740	33 U	33 U	33 UJ	33 U	33 U
AROCLOR-1248	220	740	33 U	33 U	33 UJ	33 U	33 U
AROCLOR-1254	220	740	33 U	33 U	33 UJ	33 U	33 U
AROCLOR-1260	220	740	33 U	33 U	33 UJ	33 U	33 U
AROCLOR-1262			33 U	33 U	33 UJ	33 U	33 U
AROCLOR-1268			33 U	33 U	33 UJ	33 U	33 U
BETA-BHC	270	960	1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
DELTA-BHC	77	270	1.7 U				
DIELDRIN	30	110	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
ENDOSULFAN I	370000	3700000	1.7 U				
ENDOSULFAN II	370000	3700000	3.3 U				
ENDOSULFAN SULFATE	370000	3700000	3.3 U				
ENDRIN	18000	180000	3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
ENDRIN ALDEHYDE	18000	180000	3.3 U				
ENDRIN KETONE	18000	180000	3.3 U				
GAMMA-BHC (LINDANE)	520	2100	1.7 U				
GAMMA-CHLORDANE	1600	6500	1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
HEPTACHLOR	110	380	1.7 U				

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-906-0006	TF4-SD-907-0006	TF4-SD-908-0006	TF4-SD-909-0006
LOCATION ID			TF4-SD-901	TF4-SD-906	TF4-SD-907	TF4-SD-908	TF4-SD-909
SAMPLE DATE			03/18/10	03/18/10	03/17/10	03/17/10	03/17/10
TOP DEPTH			0 FT				
BOTTOM DEPTH			0.5 FT				
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM
HEPTACHLOR EPOXIDE	53	190	1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
METHOXYCHLOR	310000	3100000	17 U				
TOTAL AROCLOR	220	740	33 U	33 U	33 UJ	33 U	33 U
TOTAL CHLORDANE			1.7 UJ	1.7 U	1.7 U	1.7 U	1.7 U
TOTAL DDD/DDE/DDT			3.3 UJ	3.3 U	3.3 U	3.3 U	3.3 U
TOXAPHENE	440	1600	170 U				
METALS (MG/KG)							
ALUMINUM	77000	990000	6470	11700	8680	8930	12100
ANTIMONY	31	410	0.19 UJ	0.5 UJ	0.32 UJ	0.77 UJ	0.18 UJ
ARSENIC	0.39	1.6	10.8	46.6 J	12.2	12.5	14.7 J
BARIUM	15000	190000	19 J	64.7 J	43.1 J	27.3 J	44.8 J
BERYLLIUM	160	2000	0.37 J	0.53 J	0.47 J	0.44 J	0.56 J
CADMIUM	70	800	0.24 J	1.2	0.37 J	0.25 J	0.42
CALCIUM			509 J	1120 J	830 J	758 J	624 J
CHROMIUM	0.29	5.6	11.2 J	23.6 J	19.3 J	12.1 J	14.9 J
COBALT	23	300	9.5	76.2	13.8	9.6	17.2
COPPER	3100	41000	11.9	19.1	21.3	12.9	20
IRON	55000	720000	25000	145000	26200	28900	39500
LEAD	400	800	21.6 J	21.6 J	54.2 J	27.3 J	65.5 J
MAGNESIUM			1920	4160	2320	2090	2420
MANGANESE	1800	23000	301	2770	451	368	676
MERCURY	5.6	34	0.047 J	0.046 J	0.093	0.058	0.17
NICKEL	1500	20000	16.3	132	25.7	18	22
POTASSIUM			216	351 J	208	271	272
SELENIUM	390	5100	2.7 UJ	12.1 UJ	2.5 UJ	3.3 UJ	4.1 UJ
SILVER	390	5100	0.083 U	0.22 U	0.14 U	0.1 U	0.077 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-906-0006	TF4-SD-907-0006	TF4-SD-908-0006	TF4-SD-909-0006
LOCATION ID			TF4-SD-901	TF4-SD-906	TF4-SD-907	TF4-SD-908	TF4-SD-909
SAMPLE DATE			03/18/10	03/18/10	03/17/10	03/17/10	03/17/10
TOP DEPTH			0 FT				
BOTTOM DEPTH			0.5 FT				
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM
SODIUM			23.9 J	114 J	32.7 J	54 J	55.7
THALLIUM			0.85 J	6.8	1.4 J	1 J	2
VANADIUM	390	5200	13.6	19.3	17.7	16.5	26.5
ZINC	23000	310000	65.5	199	101	67.8	76.6
MISCELLANEOUS PARAMETERS (S.U.)							
PH			5	6.1	5.7	5.9	6
MISCELLANEOUS PARAMETERS (MG/KG)							
TOTAL ORGANIC CARBON			22000	47000	31000	18000	26000
DIOXINS/FURANS (NG/KG)							
1,2,3,4,6,7,8,9-OCDD	15000	60000	6190 J	502	2640 J	2080 J	2120 J
1,2,3,4,6,7,8,9-OCDF	15000	60000	169 J	4.52 U	35.4	6.8 J	6.95
1,2,3,4,6,7,8-HPCDD	450	1800	203 J	14.6	89.2	30.1	33.2
1,2,3,4,6,7,8-HPCDF	450	1800	24.7 J	2.22 J	12.4	2.87 J	2.99 J
1,2,3,4,7,8,9-HPCDF	450	1800	2.65 J	0.132 U	1.24 J	0.314 U	0.383 U
1,2,3,4,7,8-HXCDD	45	180	1.74 J	0.242 J	1.01 J	0.415 J	0.37 J
1,2,3,4,7,8-HXCDF	45	180	1.34 J	0.249 J	0.864 J	0.416 J	0.585 J
1,2,3,6,7,8-HXCDD	45	180	4.7	0.587 J	2.95 J	0.891 J	0.943 J
1,2,3,6,7,8-HXCDF	45	180	1.16 J	0.129 J	0.886 J	0.354 J	0.426 J
1,2,3,7,8,9-HXCDD	45	180	4.07 J	0.572 U	3.21 J	0.985 J	0.985 J
1,2,3,7,8,9-HXCDF	45	180	0.332 U	0.0631 U	0.125 J	0.0791 J	0.0578 U
1,2,3,7,8-PECDD	4.5	18	0.83 J	0.0435 U	0.655 J	0.192 J	0.244 J
1,2,3,7,8-PECDF	150	600	0.272 J	0.106 J	0.22 J	0.133 J	0.224 J
2,3,4,6,7,8-HXCDF	45	180	1.13 J	0.216 J	0.676 J	0.326 J	0.446 J
2,3,4,7,8-PECDF	15	60	0.261 J	0.164 J	0.162 J	0.187 J	0.243 J
2,3,7,8-TCDD	4.5	18	0.0398 U	0.0465 U	0.0287 U	0.0252 U	0.0249 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-906-0006	TF4-SD-907-0006	TF4-SD-908-0006	TF4-SD-909-0006
LOCATION ID			TF4-SD-901	TF4-SD-906	TF4-SD-907	TF4-SD-908	TF4-SD-909
SAMPLE DATE			03/18/10	03/18/10	03/17/10	03/17/10	03/17/10
TOP DEPTH			0 FT				
BOTTOM DEPTH			0.5 FT				
SACODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE			NM	NM	NM	NM	NM
2,3,7,8-TCDF			45	180	0.536 J	0.308 J	0.257 J
TEQ BIRD	4.5	18	3.67 J	0.647 J	2.25 J	1.2 J	1.47 J
TEQ BIRD HALFND	4.5	18	3.71 J	0.725 J	2.26 J	1.21 J	1.48 J
TEQ FISH	4.5	18	3.43 J	0.376 J	2.07 J	0.918 J	1.02 J
TEQ FISH HALFND	4.5	18	3.47 J	0.428 J	2.09 J	0.932 J	1.04 J
TEQ MAMMAL	4.5	18	6.6 J	0.544 J	3.54 J	1.58 J	1.74 J
TEQ MAMMAL HALFND	4.5	18	6.63 J	0.622 J	3.55 J	1.6 J	1.76 J
TOTAL HPCDD			363	30.1	177	63.5	69.3
TOTAL HPCDF			104	6.19 J	33.5	7.04	7.63
TOTAL HXCDD			32.3	4.86 J	19.6	7.8	8.07
TOTAL HXCDF			20	3.21 J	17.6	5.86	7.13
TOTAL PECDD			4.38	0.0435 U	2.57 J	0.762 J	1.43 J
TOTAL PECDF			12	1.69 J	6.99	5.11	8.07
TOTAL TCDD			0.421 J	0.0465 U	0.0287 U	0.0252 U	0.583 J
TOTAL TCDF			5.59	2.79 U	2.53	1.32 J	2.09

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-910-0006	TF4-SD-911-0006	TF4-SD-912-0006
LOCATION ID					AVG	
SAMPLE DATE			TF4-SD-901	TF4-SD-910	TF4-SD-911	TF4-SD-912
TOP DEPTH			03/18/10	03/17/10	03/17/10	03/17/10
BOTTOM DEPTH			0 FT	0 FT	0 FT	0 FT
SACODE			0.5 FT	0.5 FT	0.5 FT	0.5 FT
QC TYPE			NORMAL	NORMAL	AVG	NORMAL
QC TYPE			NM	NM	NM	NM
VOLATILES (UG/KG)						
1,1,1-TRICHLOROETHANE	8700000	38000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
1,1,2,2-TETRACHLOROETHANE	560	2800	7.2 UJ	11 U	8.25 UJ	4.5 UJ
1,1,2-TRICHLOROETHANE	1100	5300	7.2 UJ	11 U	8.25 UJ	4.5 UJ
1,1,2-TRICHLOROTRIFLUOROETHANE	43000000	180000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
1,1-DICHLOROETHANE	3300	17000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
1,1-DICHLOROETHENE	240000	1100000	7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
1,2,3-TRICHLOROBENZENE	49000	490000	7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
1,2,4-TRICHLOROBENZENE	22000	99000	7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4	69	7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
1,2-DIBROMOETHANE	34	170	7.2 UJ	11 U	8.25 UJ	4.5 UJ
1,2-DICHLOROBENZENE	1900000	9800000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
1,2-DICHLOROETHANE	430	2200	7.2 UJ	11 U	8.25 UJ	4.5 UJ
1,2-DICHLOROPROPANE	890	4500	7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
1,3-DICHLOROBENZENE			7.2 UJ	11 U	8.25 UJ	4.5 UJ
1,4-DICHLOROBENZENE	2400	12000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
2-BUTANONE	28000000	200000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
2-HEXANONE	210000	1400000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
4-METHYL-2-PENTANONE	5300000	53000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
ACETONE	61000000	630000000	90 J	11 U	120 J	73 J
BENZENE	1100	5400	7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
BROMOCHLOROMETHANE			7.2 UJ	11 U	8.25 UJ	4.5 UJ
BROMODICHLOROMETHANE	270	1400	7.2 UJ	11 U	8.25 UJ	4.5 UJ
BROMOFORM	61000	220000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
BROMOMETHANE	7300	32000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
BTEX			7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
CARBON DISULFIDE	820000	3700000	7.2 UJ	11 U	8.25 UJ	15 J

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED; U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-910-0006	TF4-SD-911-0006	TF4-SD-912-0006
LOCATION ID					AVG	
SAMPLE DATE			TF4-SD-901	TF4-SD-910	TF4-SD-911	TF4-SD-912
TOP DEPTH			03/18/10	03/17/10	03/17/10	03/17/10
BOTTOM DEPTH			0 FT	0 FT	0 FT	0 FT
SACODE			0.5 FT	0.5 FT	0.5 FT	0.5 FT
QC TYPE			NORMAL	NORMAL	AVG	NORMAL
			NM	NM	NM	NM
CARBON TETRACHLORIDE	610	3000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
CHLOROBENZENE	290000	1400000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
CHLORODIBROMOMETHANE	680	3300	7.2 UJ	11 U	8.25 UJ	4.5 UJ
CHLOROETHANE	15000000	61000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
CHLOROFORM	290	1500	7.2 UJ	11 U	8.25 UJ	4.5 UJ
CHLOROMETHANE	120000	500000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
CIS-1,2-DICHLOROETHENE	780000	10000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
CIS-1,3-DICHLOROPROPENE	1700	8100	7.2 UJ	11 U	8.25 UJ	4.5 UJ
CYCLOHEXANE	7000000	29000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
DICHLORODIFLUOROMETHANE	180000	780000	7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
ETHYLBENZENE	5400	27000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
ISOPROPYLBENZENE	2100000	11000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
M+P-XYLENES			7.2 UJ	11 U	8.25 UJ	4.5 UJ
METHYL ACETATE	78000000	1000000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
METHYL CYCLOHEXANE			7.2 UJ	11 U	8.25 UJ	4.5 UJ
METHYL TERT-BUTYL ETHER	43000	220000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
METHYLENE CHLORIDE	11000	53000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
O-XYLENE	3800000	19000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
STYRENE	6300000	36000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
TETRACHLOROETHENE	550	2600	7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
TOLUENE	5000000	45000000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
TOTAL 1,2-DICHLOROETHENE	700000	9200000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
TOTAL CHLORINATED ETHENES			7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
TOTAL CHLORINATED VOCS			7.2 UJ	11 UJ	8.25 UJ	4.5 UJ
TOTAL XYLENES	630000	2700000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
TRANS-1,2-DICHLOROETHENE	150000	690000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
TRANS-1,3-DICHLOROPROPENE	1700	8100	7.2 UJ	11 U	8.25 UJ	4.5 UJ

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED; U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-910-0006	TF4-SD-911-0006	TF4-SD-912-0006
LOCATION ID					AVG	
SAMPLE DATE			TF4-SD-901	TF4-SD-910	TF4-SD-911	TF4-SD-912
TOP DEPTH			03/18/10	03/17/10	03/17/10	03/17/10
BOTTOM DEPTH			0 FT	0 FT	0 FT	0 FT
SACODE			0.5 FT	0.5 FT	0.5 FT	0.5 FT
QC TYPE			NORMAL	NORMAL	AVG	NORMAL
	NM	NM	NM	NM		
TRICHLOROETHENE	2800	14000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
TRICHLOROFLUOROMETHANE	790000	3400000	7.2 UJ	11 U	8.25 UJ	4.5 UJ
VINYL CHLORIDE	60	1700	7.2 UJ	11 U	8.25 UJ	4.5 UJ
SEMIVOLATILES (UG/KG)						
1,1-BIPHENYL	3900000	51000000	330 U	330 U	330 U	330 U
1,2,4,5-TETRACHLOROBENZENE	18000	180000	3.3 U	3.3 U	3.3 U	3.3 U
1,4-DIOXANE	44000	160000	3.3 U	3.3 U	3.3 U	3.3 U
2,2'-OXYBIS(1-CHLOROPROPANE)	4600	22000	330 U	330 U	330 U	330 U
2,3,4,6-TETRACHLOROPHENOL	1800000	18000000	3.3 UJ	3.3 U	3.3 U	3.3 UJ
2,4,5-TRICHLOROPHENOL	6100000	62000000	670 U	670 U	670 U	670 U
2,4,6-TRICHLOROPHENOL	44000	160000	330 U	330 U	330 U	330 U
2,4-DICHLOROPHENOL	180000	1800000	3.3 UJ	3.3 U	3.3 U	3.3 U
2,4-DIMETHYLPHENOL	1200000	12000000	3.3 U	3.3 U	3.3 U	3.3 UJ
2,4-DINITROPHENOL	120000	1200000	670 U	670 U	670 U	670 U
2,4-DINITROTOLUENE	1600	5500	330 U	330 U	330 U	330 U
2,6-DINITROTOLUENE	61000	620000	330 U	330 U	330 U	330 U
2-CHLORONAPHTHALENE	6300000	82000000	330 U	330 U	330 U	330 U
2-CHLOROPHENOL	390000	5100000	3.3 UJ	3.3 U	3.3 U	3.3 U
2-METHYLNAPHTHALENE	310000	4100000	3.3 U	3.3 U	2.68	3.3 U
2-METHYLPHENOL	3100000	31000000	10 J	3.3 UJ	3.3 UJ	12 J
2-NITROANILINE	610000	6000000	670 U	670 U	670 U	670 U
2-NITROPHENOL			330 U	330 U	330 U	330 U
3,3'-DICHLOROBENZIDINE	1100	3800	330 U	330 U	330 U	330 U
3-NITROANILINE			670 U	670 U	670 U	670 U
4,6-DINITRO-2-METHYLPHENOL	4900	49000	670 U	670 U	670 U	670 U
4-BROMOPHENYL PHENYL ETHER			330 U	330 U	330 U	330 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED; U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-910-0006	TF4-SD-911-0006	TF4-SD-912-0006
LOCATION ID					AVG	
SAMPLE DATE			TF4-SD-901	TF4-SD-910	TF4-SD-911	TF4-SD-912
TOP DEPTH			03/18/10	03/17/10	03/17/10	03/17/10
BOTTOM DEPTH			0 FT	0 FT	0 FT	0 FT
SACODE			0.5 FT	0.5 FT	0.5 FT	0.5 FT
QC TYPE			NORMAL	NORMAL	AVG	NORMAL
			NM	NM	NM	NM
4-CHLORO-3-METHYLPHENOL	6100000	62000000	3.3 U	3.3 U	3.3 U	3.3 U
4-CHLOROANILINE	2400	8600	330 UJ	330 UJ	330 UJ	330 UJ
4-CHLOROPHENYL PHENYL ETHER			330 U	330 U	330 U	330 U
4-METHYLPHENOL	310000	3100000	3.3 U	3.3 U	3.68	3.3 U
4-NITROANILINE	24000	86000	670 U	670 U	670 U	670 U
4-NITROPHENOL			670 UJ	670 UJ	670 UJ	670 UJ
ACENAPHTHENE	3400000	33000000	3.3 U	3.3 U	5.82 J	3.3 U
ACENAPHTHYLENE	3400000	33000000	4.7	5	5.9 J	4.5
ACETOPHENONE	7800000	100000000	330 U	330 U	330 U	330 U
ANTHRACENE	17000000	170000000	11	6.1	20.8 J	11
ATRAZINE	2100	7500	3.3 UJ	3.3 UJ	3.3 UJ	3.3 UJ
BENZALDEHYDE	7800000	100000000	330 UJ	330 UJ	182 J	160 J
BENZO(A)ANTHRACENE	150	2100	46 J	27 J	72 J	50 J
BENZO(A)PYRENE	15	210	61 J	41	80 J	55
BENZO(B)FLUORANTHENE	150	2100	67 J	48 J	92.5 J	64 J
BENZO(G,H,I)PERYLENE	1700000	17000000	49 J	33	71 J	34
BENZO(K)FLUORANTHENE	1500	21000	68	36	111 J	66 J
BIS(2-CHLOROETHOXY)METHANE	180000	1800000	330 U	330 U	330 U	330 U
BIS(2-CHLOROETHYL)ETHER	210	1000	330 U	330 U	330 U	330 U
BIS(2-ETHYLHEXYL)PHTHALATE	35000	120000	120 J	330 U	162 J	150 J
BUTYL BENZYL PHTHALATE	260000	910000	330 U	330 U	330 U	330 U
CAPROLACTAM	31000000	310000000	330 U	330 U	330 U	330 U
CARBAZOLE			330 U	330 U	330 U	330 U
CHRYSENE	15000	210000	78 J	40 J	91.5 J	81 J
DIBENZO(A,H)ANTHRACENE	15	210	13 J	12	25 J	11
DIBENZOFURAN	78000	1000000	330 U	330 U	330 U	330 U
DIETHYL PHTHALATE	49000000	490000000	330 U	330 U	330 U	330 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
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TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-910-0006	TF4-SD-911-0006	TF4-SD-912-0006
LOCATION ID					AVG	
SAMPLE DATE			TF4-SD-901	TF4-SD-910	TF4-SD-911	TF4-SD-912
TOP DEPTH			03/18/10	03/17/10	03/17/10	03/17/10
BOTTOM DEPTH			0 FT	0 FT	0 FT	0 FT
SACODE			0.5 FT	0.5 FT	0.5 FT	0.5 FT
QC TYPE			NORMAL	NORMAL	AVG	NORMAL
			NM	NM	NM	NM
DIMETHYL PHTHALATE			330 U	330 U	330 U	330 U
DI-N-BUTYL PHTHALATE	6100000	62000000	330 U	330 U	330 U	330 U
DI-N-OCTYL PHTHALATE			330 U	330 U	330 U	330 U
FLUORANTHENE	2300000	22000000	110 J	64	134 J	110
FLUORENE	2300000	22000000	5.4	3.3 U	9.7 J	5.6
HEXACHLOROBENZENE	300	1100	3.3 U	3.3 U	3.3 U	3.3 U
HEXACHLOROBUTADIENE	6200	22000	330 U	330 U	330 U	330 U
HEXACHLOROCYCLOPENTADIENE	370000	3700000	330 U	330 U	330 U	330 U
HEXACHLOROETHANE	35000	120000	330 U	330 U	330 U	330 U
HIGH MOLECULAR WEIGHT PAHS			614 J	384 J	848 J	594 J
INDENO(1,2,3-CD)PYRENE	150	2100	39 J	28	59.5 J	27
ISOPHORONE	510000	1800000	330 U	330 U	330 U	330 U
LOW MOLECULAR WEIGHT PAHS			82.2	38.1	135 J	85.3
NAPHTHALENE	3600	18000	4.1	3.3 U	4.42 J	4.2
NITROBENZENE	4800	24000	330 U	330 U	330 U	330 U
N-NITROSO-DI-N-PROPYLAMINE	69	250	330 U	330 U	330 U	330 U
N-NITROSODIPHENYLAMINE	99000	350000	330 U	330 U	330 U	330 U
PENTACHLOROPHENOL	3000	9000	33 UJ	33 UJ	33 UJ	33 U
PHENANTHRENE	1700000	17000000	57	27	88.5 J	60
PHENOL	18000000	180000000	3.3 U	3.3 U	3.52	3.3 U
PYRENE	1700000	17000000	83	55	114 J	96
TOTAL CARCINOGENIC PAHS-HALFND	15	210	372 J	232 J	532 J	354 J
TOTAL CARCINOGENIC PAHS-POS	15	210	372 J	232 J	532 J	354 J
TOTAL CHLORINATED VOCS			330 U	330 U	330 U	330 U
TOTAL PAHS			696 J	422 J	984 J	679 J
PESTICIDES/PCBS (UG/KG)						

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-910-0006	TF4-SD-911-0006	TF4-SD-912-0006
LOCATION ID					AVG	
SAMPLE DATE			TF4-SD-901	TF4-SD-910	TF4-SD-911	TF4-SD-912
TOP DEPTH			03/18/10	03/17/10	03/17/10	03/17/10
BOTTOM DEPTH			0 FT	0 FT	0 FT	0 FT
SACODE			0.5 FT	0.5 FT	0.5 FT	0.5 FT
QC TYPE			NORMAL	NORMAL	AVG	NORMAL
			NM	NM	NM	NM
4,4'-DDD	2000	7200	3.3 UJ	3.4	3.3 U	3.3 U
4,4'-DDE	1400	5100	3.3 UJ	15 J	3.3 U	3.3 U
4,4'-DDT	1700	7000	3.3 U	6.7	3.3 U	3.3 U
ALDRIN	29	100	1.7 U	1.7 U	1.7 U	1.7 U
ALPHA-BHC	77	270	1.7 U	1.7 U	1.7 U	1.7 U
ALPHA-CHLORDANE	1600	6500	1.7 UJ	1.7 U	1.7 U	1.7 U
AROCLOR-1016	3900	21000	33 U	33 UJ	33 UJ	33 UJ
AROCLOR-1221	140	540	33 U	33 UJ	33 UJ	33 UJ
AROCLOR-1232	140	540	33 U	33 UJ	33 UJ	33 UJ
AROCLOR-1242	220	740	33 U	33 UJ	33 UJ	33 UJ
AROCLOR-1248	220	740	33 U	33 UJ	33 UJ	33 UJ
AROCLOR-1254	220	740	33 U	33 UJ	33 UJ	33 UJ
AROCLOR-1260	220	740	33 U	33 UJ	33 UJ	33 UJ
AROCLOR-1262			33 U	33 UJ	33 UJ	33 UJ
AROCLOR-1268			33 U	33 UJ	33 UJ	33 UJ
BETA-BHC	270	960	1.7 UJ	1.7 U	1.7 U	1.7 U
DELTA-BHC	77	270	1.7 U	1.7 U	1.7 U	1.7 U
DIELDRIN	30	110	3.3 UJ	3.3 U	3.3 U	3.3 U
ENDOSULFAN I	370000	3700000	1.7 U	1.7 U	1.7 U	1.7 U
ENDOSULFAN II	370000	3700000	3.3 U	3.3 U	3.3 U	3.3 U
ENDOSULFAN SULFATE	370000	3700000	3.3 U	3.3 U	3.3 U	3.3 U
ENDRIN	18000	180000	3.3 UJ	3.3 U	3.3 U	3.3 U
ENDRIN ALDEHYDE	18000	180000	3.3 U	3.3 U	2.72	3.3 U
ENDRIN KETONE	18000	180000	3.3 U	3.3 U	3.3 U	3.3 U
GAMMA-BHC (LINDANE)	520	2100	1.7 U	1.7 U	1.7 U	1.7 U
GAMMA-CHLORDANE	1600	6500	1.7 UJ	1.7 U	1.7 U	1.7 U
HEPTACHLOR	110	380	1.7 U	1.7 U	1.7 U	1.7 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-910-0006	TF4-SD-911-0006	TF4-SD-912-0006
LOCATION ID					AVG	
SAMPLE DATE			TF4-SD-901	TF4-SD-910	TF4-SD-911	TF4-SD-912
TOP DEPTH			03/18/10	03/17/10	03/17/10	03/17/10
BOTTOM DEPTH			0 FT	0 FT	0 FT	0 FT
SACODE			0.5 FT	0.5 FT	0.5 FT	0.5 FT
QC TYPE			NORMAL	NORMAL	AVG	NORMAL
			NM	NM	NM	NM
HEPTACHLOR EPOXIDE	53	190	1.7 UJ	1.7 U	1.7 U	1.7 U
METHOXYCHLOR	310000	3100000	17 U	17 U	17 U	17 U
TOTAL AROCLOR	220	740	33 U	33 UJ	33 UJ	33 UJ
TOTAL CHLORDANE			1.7 UJ	1.7 U	1.7 U	1.7 U
TOTAL DDD/DDE/DDT			3.3 UJ	25.1 J	3.3 U	3.3 U
TOXAPHENE	440	1600	170 U	170 U	170 U	170 U
METALS (MG/KG)						
ALUMINUM	77000	990000	6470	12900	9880	4730
ANTIMONY	31	410	0.19 UJ	0.28 UJ	0.29 UJ	0.28 UJ
ARSENIC	0.39	1.6	10.8	11.7 J	16	20.3
BARIUM	15000	190000	19 J	29.2 J	32.7 J	21.4 J
BERYLLIUM	160	2000	0.37 J	0.68 J	0.5 J	0.21 J
CADMIUM	70	800	0.24 J	0.25 J	0.545	0.13 J
CALCIUM			509 J	590 J	1220 J	691 J
CHROMIUM	0.29	5.6	11.2 J	15.2 J	16.2 J	7.3 J
COBALT	23	300	9.5	12	15.5	9.6
COPPER	3100	41000	11.9	24.9	22.4	13.7
IRON	55000	720000	25000	41100	36200	32400
LEAD	400	800	21.6 J	59.2 J	41.8 J	6.3 J
MAGNESIUM			1920	3040	3160	1370
MANGANESE	1800	23000	301	309	432	279
MERCURY	5.6	34	0.047 J	0.1	0.0935	0.019 J
NICKEL	1500	20000	16.3	22.5	24.9	18.4
POTASSIUM			216	583	456	155 J
SELENIUM	390	5100	2.7 UJ	4.1 UJ	4.3 UJ	4.2 UJ
SILVER	390	5100	0.083 U	0.12 U	0.125 U	0.13 U

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-910-0006	TF4-SD-911-0006	TF4-SD-912-0006
LOCATION ID					AVG	
SAMPLE DATE			TF4-SD-901	TF4-SD-910	TF4-SD-911	TF4-SD-912
TOP DEPTH			03/18/10	03/17/10	03/17/10	03/17/10
BOTTOM DEPTH			0 FT	0 FT	0 FT	0 FT
SACODE			0.5 FT	0.5 FT	0.5 FT	0.5 FT
QC TYPE			NORMAL	NORMAL	AVG	NORMAL
			NM	NM	NM	NM
SODIUM			23.9 J	518	558	75.8 J
THALLIUM			0.85 J	0.77 J	0.995 J	0.38 U
VANADIUM	390	5200	13.6	27.2	20.4	9.6
ZINC	23000	310000	65.5	88	124	59
MISCELLANEOUS PARAMETERS (S.U.)						
PH			5	5.9	6.6	4.9
MISCELLANEOUS PARAMETERS (MG/KG)						
TOTAL ORGANIC CARBON			22000	36000	39500	50000
DIOXINS/FURANS (NG/KG)						
1,2,3,4,6,7,8,9-OCDD	15000	60000	6190 J	8750 J	3650 J	1120
1,2,3,4,6,7,8,9-OCDF	15000	60000	169 J	27.6	42.4 J	4.97 U
1,2,3,4,6,7,8-HPCDD	450	1800	203 J	129	127 J	27.7
1,2,3,4,6,7,8-HPCDF	450	1800	24.7 J	12.3	20.6 J	2.71 J
1,2,3,4,7,8,9-HPCDF	450	1800	2.65 J	1.33 J	1.48 J	0.292 UJ
1,2,3,4,7,8-HXCDD	45	180	1.74 J	1.73 J	1.81 J	0.358 J
1,2,3,4,7,8-HXCDF	45	180	1.34 J	2.15 J	1.35 J	0.317 J
1,2,3,6,7,8-HXCDD	45	180	4.7	3.58 J	3.83 J	0.824 J
1,2,3,6,7,8-HXCDF	45	180	1.16 J	1.69 J	1.27 J	0.293 J
1,2,3,7,8,9-HXCDD	45	180	4.07 J	4.02 J	4.8 J	0.926 U
1,2,3,7,8,9-HXCDF	45	180	0.332 U	0.093 J	0.138 J	0.0984 U
1,2,3,7,8-PECDD	4.5	18	0.83 J	0.928 J	0.953 J	0.0694 U
1,2,3,7,8-PECDF	150	600	0.272 J	0.853 J	0.388 J	0.171 J
2,3,4,6,7,8-HXCDF	45	180	1.13 J	1.52 J	1.2 J	0.242 J
2,3,4,7,8-PECDF	15	60	0.261 J	0.883 J	0.428 J	0.107 J
2,3,7,8-TCDD	4.5	18	0.0398 U	0.145 J	0.136 J	0.0455 U

TABLE A-4.5
ANALYTICAL RESULTS - SEDIMENT
DU4-1_2010
TANK FARM 4, NEWPORT, RHODE ISLAND
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SAMPLE ID	EPA RSL Residential soil	EPA RSL Industrial soil	TF4-SD-901-0006	TF4-SD-910-0006	TF4-SD-911-0006	TF4-SD-912-0006
LOCATION ID					AVG	
SAMPLE DATE			TF4-SD-901	TF4-SD-910	TF4-SD-911	TF4-SD-912
TOP DEPTH			03/18/10	03/17/10	03/17/10	03/17/10
BOTTOM DEPTH			0 FT	0 FT	0 FT	0 FT
SACODE			0.5 FT	0.5 FT	0.5 FT	0.5 FT
QC TYPE			NORMAL	NORMAL	AVG	NORMAL
			NM	NM	NM	NM
2,3,7,8-TCDF	45	180	0.536 J	1.56 J	0.441 J	0.171 U
TEQ BIRD	4.5	18	3.67 J	5.81 J	3.7 J	0.402 J
TEQ BIRD HALFND	4.5	18	3.71 J	5.81 J	3.72 J	0.598 J
TEQ FISH	4.5	18	3.43 J	4.26 J	3.43 J	0.501 J
TEQ FISH HALFND	4.5	18	3.47 J	4.26 J	3.45 J	0.574 J
TEQ MAMMAL	4.5	18	6.6 J	7.06 J	5.29 J	0.881 J
TEQ MAMMAL HALFND	4.5	18	6.63 J	7.06 J	5.31 J	1 J
TOTAL HPCDD			363	261	260 J	57.2
TOTAL HPCDF			104	31.4	51.6 J	6.82
TOTAL HXCDD			32.3	32.6	33.6 J	7.66
TOTAL HXCDF			20	26.8	21.3 J	1.92 J
TOTAL PECDD			4.38	8.09	4.6 J	0.0694 U
TOTAL PECDF			12	26.4	14.2 J	0.293 J
TOTAL TCDD			0.421 J	3.31	0.159 J	0.218 J
TOTAL TCDF			5.59	6.53	4.8 J	4.11

BLACK SHADING-EXCEEDS AT LEAST ONE CRITERION; GRAY SHADING-DETECTED;U-NOT DETECTED; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

A5 - EVALUATION OF BIODEGRADATION PARAMETERS

Appendix A-5
Tank Farm 4, Newport Naval Station
Evaluation of Biodegradation Parameters around Tanks and
Development of Geochemical Conceptual Site Model

Interaction of Petroleum and Metals in Groundwater

At some sites, the geochemical conditions that facilitate the biodegradation of petroleum can transform naturally occurring minerals in the aquifer to more mobile forms (USEPA, 1998). In addition, laboratory experimentation and numerical modeling have shown that under anaerobic conditions where petroleum degradation is occurring, concentrations of aqueous iron and manganese increased (Baedeker, et al, 1993). Some sites have dissolved metals contamination due solely from the petroleum contamination and the solution to controlling the metals plume is to eliminate the source of the petroleum.

Iron (Fe) and manganese (Mn) can be present in water in three different forms: dissolved, particulate or colloidal. Dissolved forms are ferrous iron (Fe(II)) and manganous manganese (Mn(II)). The particulate forms are ferric iron (Fe(III)) and manganic manganese (Mn(IV)). The colloidal forms are very small particles which are difficult to settle and filter, and are less common in groundwater.

Along with the temperature and pH of the water, the reduction-oxidation chemistry greatly influences the precipitation and dissolution of Fe and Mn. Aqueous Fe(II) and Mn(II) are present in significant concentrations only in natural waters that are anoxic. When the aqueous environment is aerobic, insoluble Fe(III) and Mn(III/IV) oxides form, taking these minerals out of solution and creating particulates.

Anaerobic degradation of the petroleum can result in increased concentrations of Fe and Mn in groundwater. Following a release of petroleum to the subsurface, indigenous microbes use the petroleum as an electron donor, to support microbial respiration. These bacteria use oxygen first as an electron acceptor to support respiration, and the demand on oxygen often depletes the available dissolved oxygen (DO) in the groundwater, ultimately creating anaerobic conditions. Aerobic bacteria activities are then reduced and anaerobic microorganisms (if present) may begin the degradation of the petroleum. The anaerobic bacteria will utilize other electron acceptors available in groundwater. First, the petroleum is metabolized by de-nitrification where nitrate is used as the electron acceptor. When there is still petroleum and more favorable terminal electron acceptors (like oxygen or nitrate) are absent, microbes that reduce Fe(III) and Mn(III/IV) oxides take over. In this way aqueous Fe(II) and Mn(II) are produced from the insoluble Fe(III) and Mn(III/IV) oxides (particulates).

The fate and transport of heavy metals in water is also affected by the precipitation and dissolution of Fe and Mn. Heavy metals adsorb on Fe and Mn oxide surfaces and are incorporated in the Fe and Mn oxide when precipitation of Fe and Mn occurs. As a

Tank Farm 4 FS
Appendix A5

result, changing redox conditions in natural waters and the resulting precipitation and dissolution of Fe and Mn can also cause a similar cyclical uptake and release of heavy metal pollutants. (Environmental Catalysis, 2003)

Tank Farm 4 Evaluation

Groundwater at Tank Farm 4, DU4-1 contains Mn, Fe and Co above preliminary remediation goals (PRGs) that have been proposed. In addition, arsenic (As) in groundwater at DU4-1 is elevated but is not above proposed PRGs.

An evaluation of available groundwater chemistry data from around tanks at Tank Farm 4 and DU 4-1 was performed to determine if there is evidence that historical releases of petroleum in this area altered the groundwater geochemistry beneath DU 4-1, and potentially resulted in an increase in the concentrations of Mn, Fe, Co and As in the groundwater.

The eastern boundary of DU4-1 is about 300-feet west (downgradient) of the western most tanks (Tanks 40 and 41) at Tank Farm 4. A synoptic groundwater elevation round was performed during the 2010 data gaps assessment using monitoring wells located both at DU4-1 and around tanks 38, 42, 45 and 48. Based upon the groundwater elevations measured at that time, groundwater contour maps were generated and are reproduced here as Figures 1 and 2. Examination of these figures confirms that the overall groundwater flow direction at Tank Farm 4 is westerly, from the area of the tanks to DU4-1.

Table 1 provides the field parameters and total petroleum hydrocarbon (TPH) results from groundwater sampling around the tanks at Tank Farm 4 performed in 2010. In addition, the concentrations of TPH, cobalt (Co), Fe, Mn, DO and oxygen-reduction potential (ORP) are shown schematically in wells at DU4-2 (Tank 38), DU4-3 (Tank 42), DU4-4 (Tank 45), DU4-5 (Tank 48) and DU4-1 on Figures 3 through 7, respectively. In addition, older TPH analytical data, where available, are also presented on Figures 3 through 6. These data suggest that, in many instances, the presence of TPH associated with the tanks has resulted in a reduction of DO and/or ORP. This suggests that the presence of the tanks has altered groundwater geochemistry.

The most pronounced observation of altered groundwater geochemistry is found around Tank 38 where groundwater changes from aerobic upgradient of the tank to anaerobic downgradient of the tank. At Tank 38, the groundwater from two upgradient wells had positive ORPs (176.2 and 193.7 mV) and the highest DO values (0.53 and 4.39 mg/L). The groundwater from downgradient and side gradient wells at this tank have negative ORP values (between -16.5 and -4.1 mV) and lower DO (between 0.16 and 0.33 mg/L). These observations suggest a reducing condition in groundwater as a result of groundwater flowing by the tanks upgradient of DU 4-1.

Geochemical Conceptual Site Model – Tank Farm 4

Based upon the understanding of the basic geochemical interaction between petroleum, Fe, Mn and heavy metals described above and the observation of the geochemistry at the Tank Farm 4 site, a conceptual model of the geochemistry of this interaction is provided below.

- 1) Naturally occurring Fe and Mn in the environment occur at the site under aerobic conditions.
- 2) The introduction of petroleum hydrocarbons followed by its degradation lowers the ORP of the system.
- 3) Bacterial degradation of hydrocarbons eventually results in the reduction of Fe(III) and Mn(IV) to Fe(II) and Mn(II).
- 4) The reduction in ORP is an indication of a predicted increase in concentrations of dissolved Fe and Mn in groundwater.
- 5) Co and As that had been originally sorbed to on the hydrous Fe(III) and Mn(IV), is released due to reducing conditions caused by the presence of petroleum hydrocarbons.
- 6) Once the redox conditions of the system return to the natural state, i.e. aerobic, insoluble Fe(III) and Mn(III/IV) oxides form from the dissolved Fe and Mn and the cobalt in once again precipitated with the Fe and Mn.

The conclusion of this evaluation is that Mn, Fe, Co and As are likely present in groundwater at DU4-1 as a result of reducing conditions. The reducing conditions resulted from historical petroleum releases at tanks upgradient of the DU4-1 site. When the reducing conditions are corrected, via the natural attenuation of the petroleum, the Mn, Fe and Co concentrations in groundwater will also eventually be reduced.

As depicted on Figures 3, 5 and 6, the older (1995 and /or 1998) TPH concentrations in groundwater, where available, are higher than the 2010 TPH concentrations. This suggests that degradation of petroleum in groundwater around the tanks has been occurring at the site. The vast majority of the locations monitored in 2010 have TPH concentrations in groundwater below laboratory reporting limits, as shown on Table 1. Although there are no DO or ORP data from the 1995 or 1998 groundwater sampling events, it is anticipated that the reducing conditions that resulted from historical release(s) of petroleum have also started to correct themselves.

Although existing data indicate the cyclical effect described above, there is not adequate data to determine how long it will take for the reducing conditions at DU 4-1 and other affected areas to be corrected, and subsequently a prediction of time for the concentrations of Mn, Fe and Co to reduce to below PRGs. Periodic monitoring may provide adequate data for a trend analysis to be performed to determine the rate at which the aquifer will restore itself and to estimate the time for the Mn, Fe and Co to reach PRGs.

References

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Table 1

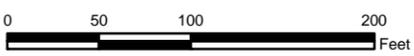
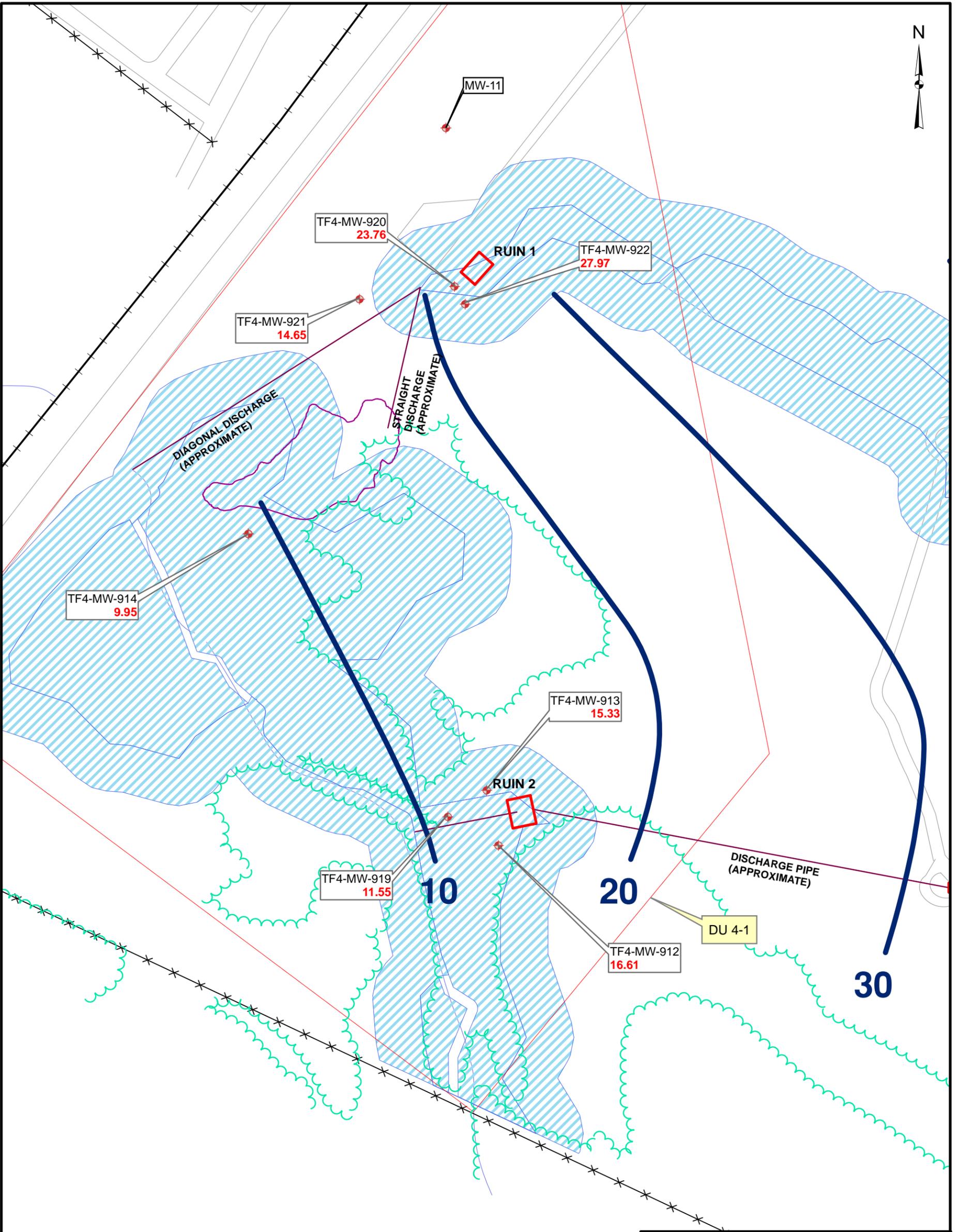
**GROUNDWATER DATA, MAY 2010 DATA GAPS INVESTIGATION
TANK FARMS 4 AND 5 CATEGORY 2 AREAS
SUMMARY OF GEOCHEMISTRY DATA
NAVSTA NEWPORT, NEWPORT RI**

Decision Unit	Well ID	screened unit	Location relative tank	Depth Sampled	Spec. Cond. (mS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	ExTPH (mg/L)	Comments
4-2 (Tank 38)	TF4-38-MW-418	Fill	upgradient	39.5	0.27	5.99	193.7	4.39	3.22	0.35U	
	TF4-38-MW-605	shallow overburden	downgradient	14.5	0.59	6.77	-16.5	0.33	2.14	0.51	
	TF4-38-MW-903	bedrock	downgradient	37.85	0.32	6.21	-4.1	0.26	6.08	0.35U	
	TF4-38-MW-904	Fill	sidegradient	35	0.25	6.00	-14.3	0.16	3.35	0.35U	
	TF4-38-MW-905	bedrock	upgradient	45	0.34	5.52	176.2	0.53	2.74	0.35U	clear, colorless
4-3 (Tank 42)	TF4-42-MW-801	Fill	downgradient	35	0.34	6.17	60.2	0.27	0.51	0.35U	
	TF4-42-MW-906	bedrock	downgradient	30	0.32	5.85	79.6	5.07	7.30	0.35U	
	TF4-42-MW-907	fill	sidegradient	27	0.34	5.87	179.3	0.53	1.22	0.35U	clear, colorless
	TF4-42-MW-908	Fill	sidegradient	37	0.33	5.94	223.5	0.54	2.00	0.35U	
	TF4-42-MW-909	bedrock	upgradient	29	0.35	5.89	139.0	3.31	9.36	0.39J	clear, colorless
4-4 (Tank 45)	TF4-45-MW-05D	bedrock	upgradient	29.5	0.58	6.06	73.6	0.47	8.17	0.35U	
	TF4-45-MW-122	Fill	cross/down-gradient	35	0.37	6.34	65.0	0.11	35.70	1.40	Slightly turbid, light brown, slight petroleum odor
	TF4-45-MW-330	Fill	sidegradient	35	0.39	5.75	-83.7	0.12	0.43	0.35U	
	TF4-45-MW-802	Fill	downgradient	34.5	0.35	5.80	189.3	0.62	16.20	0.37	clear, colorless
4-5 (Tank 48)	TF4-48-MW-408	Fill	upgradient	39.5	0.30	6.09	63.5	1.05	2.11	0.35U	clear, colorless
	TF4-48-MW-409	overburden/ ramp fill	downgradient	22.35	0.44	6.43	-58.5	0.13	4.95	0.35U	slight petroleum odor, slight sheen
	TF4-48-MW-422	overburden/ ramp fill	sidegradient	21.5	0.31	5.25	180.4	0.50	4.92	0.35U	clear, colorless
	TF4-48-MW-805	Fill	downgradient	18	0.34	6.20	17.6	0.19	9.08	0.35U	slight petroleum odor
	TF4-48-MW-910	bedrock	upgradient	40	0.37	6.23	24.1	0.43	3.22	0.35U	
5-2 (Tank 50)	TF5-MW-108	Fill	cross/ upgradient	14.72	0.35	6.55	-64.3	0.19	4.28	0.35U	clear, with slight sulfur odor
	TF5-MW-200	overburden	downgradient	18	0.51	6.58	-47.1	0.22	25.60	0.35U	clear, colorless
	TF5-MW-207B	bedrock	downgradient	23	0.47	6.01	-37	0.19	3.41	0.64	clear, colorless
	TF5-MW-911	bedrock	upgradient	19.5	0.49	6.03	112.8	1.50	7.08	0.35UJ	clear, colorless
	TF5-MW-918	bedrock	downgradient	37.85	0.405	6.73	-45.2	0.49	9.53	0.35UJ	

Notes:

U indicates not detected above indicated laboratory reporting limit

J indicates estimated value



Legend

-  Monitoring Well
-  Groundwater Contour Line
-  Decision Unit Boundary
-  Wetland
- 16.61** Groundwater Elevation

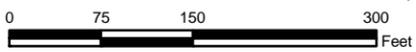
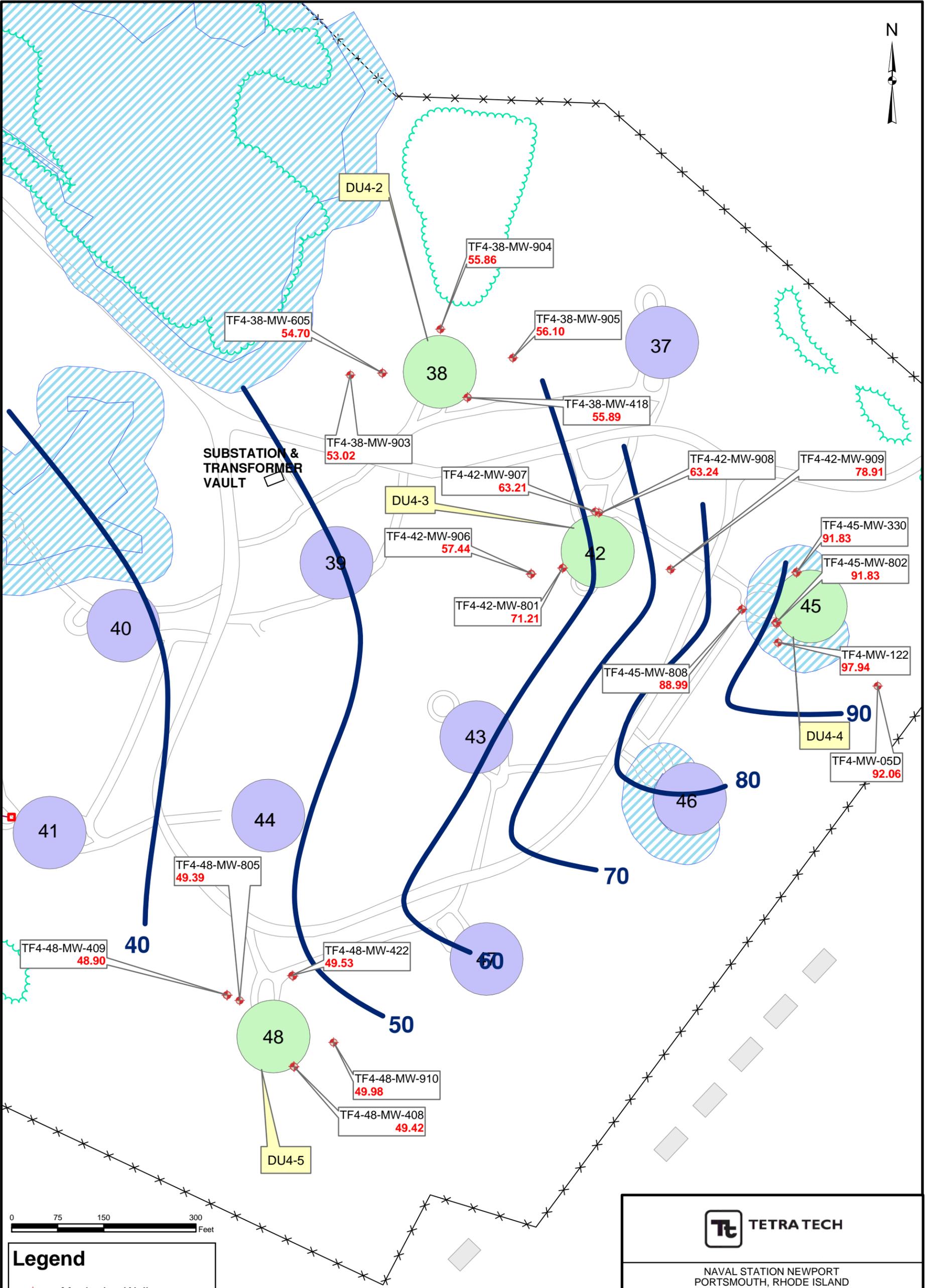


NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

GROUNDWATER CONTOUR MAP, DU 4-1

TANK FARM 4
SUMMARY OF GROUNDWATER ANALYSIS

FILE \\.\TF4_DU4-1_GW_CONTOUR.MXD	SCALE PER SCALE BAR
FIGURE NUMBER A5-1	REV 0
	DATE 07/16/12



Legend

- Monitoring Well
- Groundwater Contour Line
- Decision Unit Boundary
- Wetland
- 16.61** Groundwater Elevation

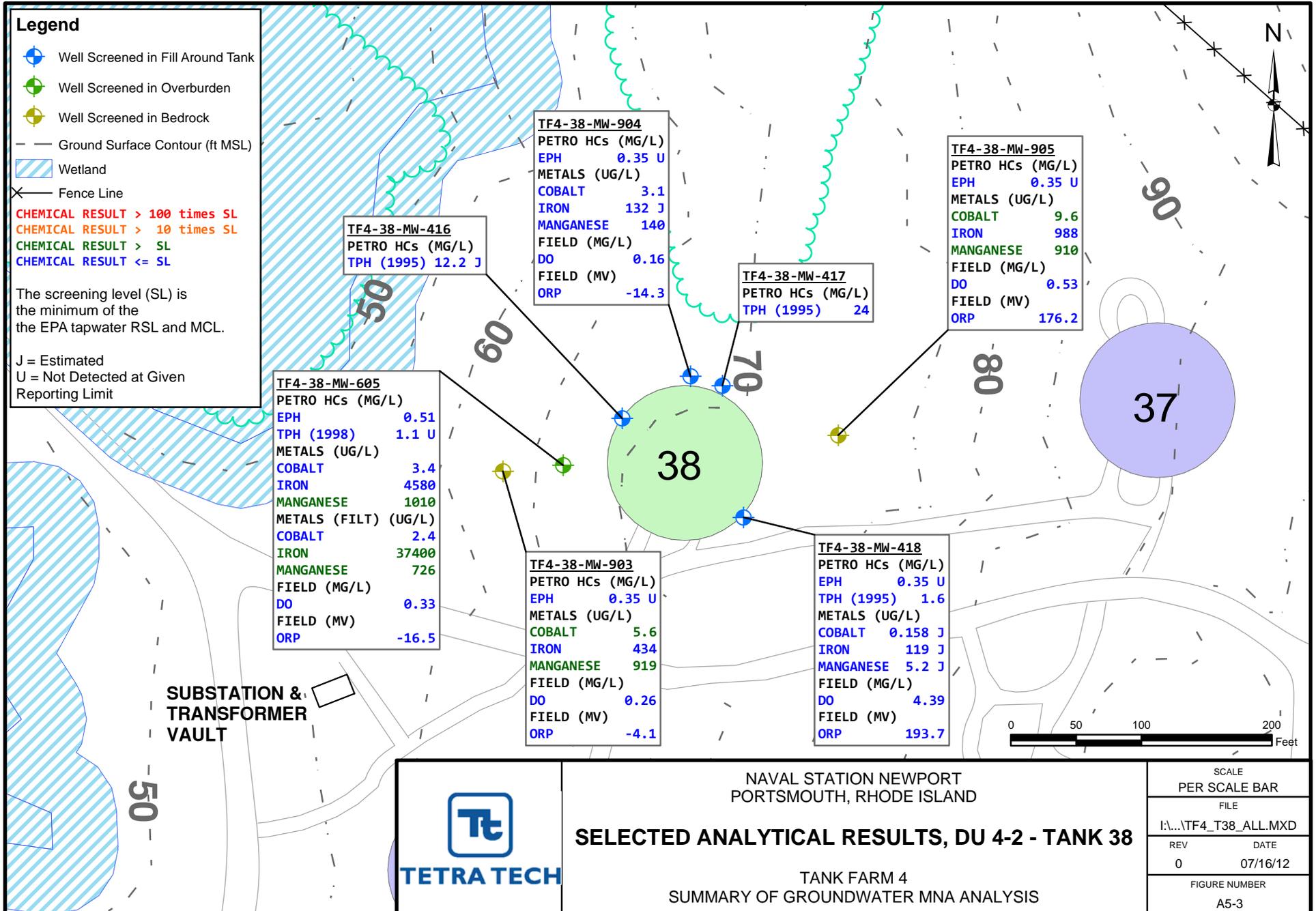
TETRA TECH

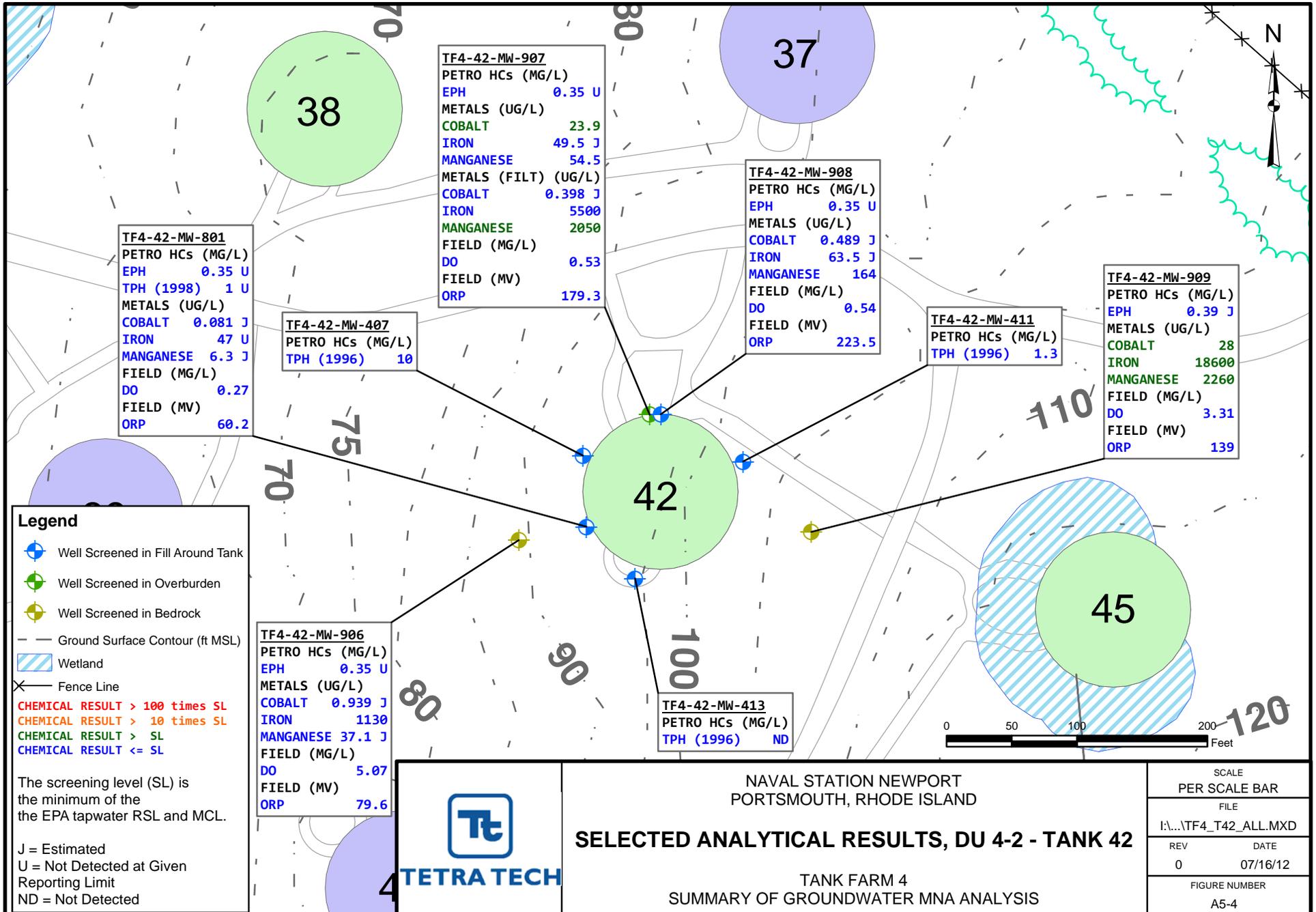
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

**GROUNDWATER CONTOUR MAP,
DU 4-2 THROUGH DU 4-5**

TANK FARM 4
SUMMARY OF GROUNDWATER MNA ANALYSIS

FILE \\TF4_DU4-2TO4-5_GW_CONTOUR.MXD	SCALE PER SCALE BAR
FIGURE NUMBER A5-2	REV DATE 0 07/16/12





TF4-42-MW-801
 PETRO HCs (MG/L)
 EPH 0.35 U
 TPH (1998) 1 U
 METALS (UG/L)
 COBALT 0.081 J
 IRON 47 U
 MANGANESE 6.3 J
 FIELD (MG/L)
 DO 0.27
 FIELD (MV)
 ORP 60.2

TF4-42-MW-407
 PETRO HCs (MG/L)
 TPH (1996) 10

TF4-42-MW-907
 PETRO HCs (MG/L)
 EPH 0.35 U
 METALS (UG/L)
 COBALT 23.9
 IRON 49.5 J
 MANGANESE 54.5
 METALS (FILT) (UG/L)
 COBALT 0.398 J
 IRON 5500
 MANGANESE 2050
 FIELD (MG/L)
 DO 0.53
 FIELD (MV)
 ORP 179.3

TF4-42-MW-908
 PETRO HCs (MG/L)
 EPH 0.35 U
 METALS (UG/L)
 COBALT 0.489 J
 IRON 63.5 J
 MANGANESE 164
 FIELD (MG/L)
 DO 0.54
 FIELD (MV)
 ORP 223.5

TF4-42-MW-411
 PETRO HCs (MG/L)
 TPH (1996) 1.3

TF4-42-MW-909
 PETRO HCs (MG/L)
 EPH 0.39 J
 METALS (UG/L)
 COBALT 28
 IRON 18600
 MANGANESE 2260
 FIELD (MG/L)
 DO 3.31
 FIELD (MV)
 ORP 139

TF4-42-MW-906
 PETRO HCs (MG/L)
 EPH 0.35 U
 METALS (UG/L)
 COBALT 0.939 J
 IRON 1130
 MANGANESE 37.1 J
 FIELD (MG/L)
 DO 5.07
 FIELD (MV)
 ORP 79.6

TF4-42-MW-413
 PETRO HCs (MG/L)
 TPH (1996) ND

Legend

- Well Screened in Fill Around Tank
- Well Screened in Overburden
- Well Screened in Bedrock
- Ground Surface Contour (ft MSL)
- Wetland
- Fence Line

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

The screening level (SL) is the minimum of the the EPA tapwater RSL and MCL.

J = Estimated
 U = Not Detected at Given Reporting Limit
 ND = Not Detected

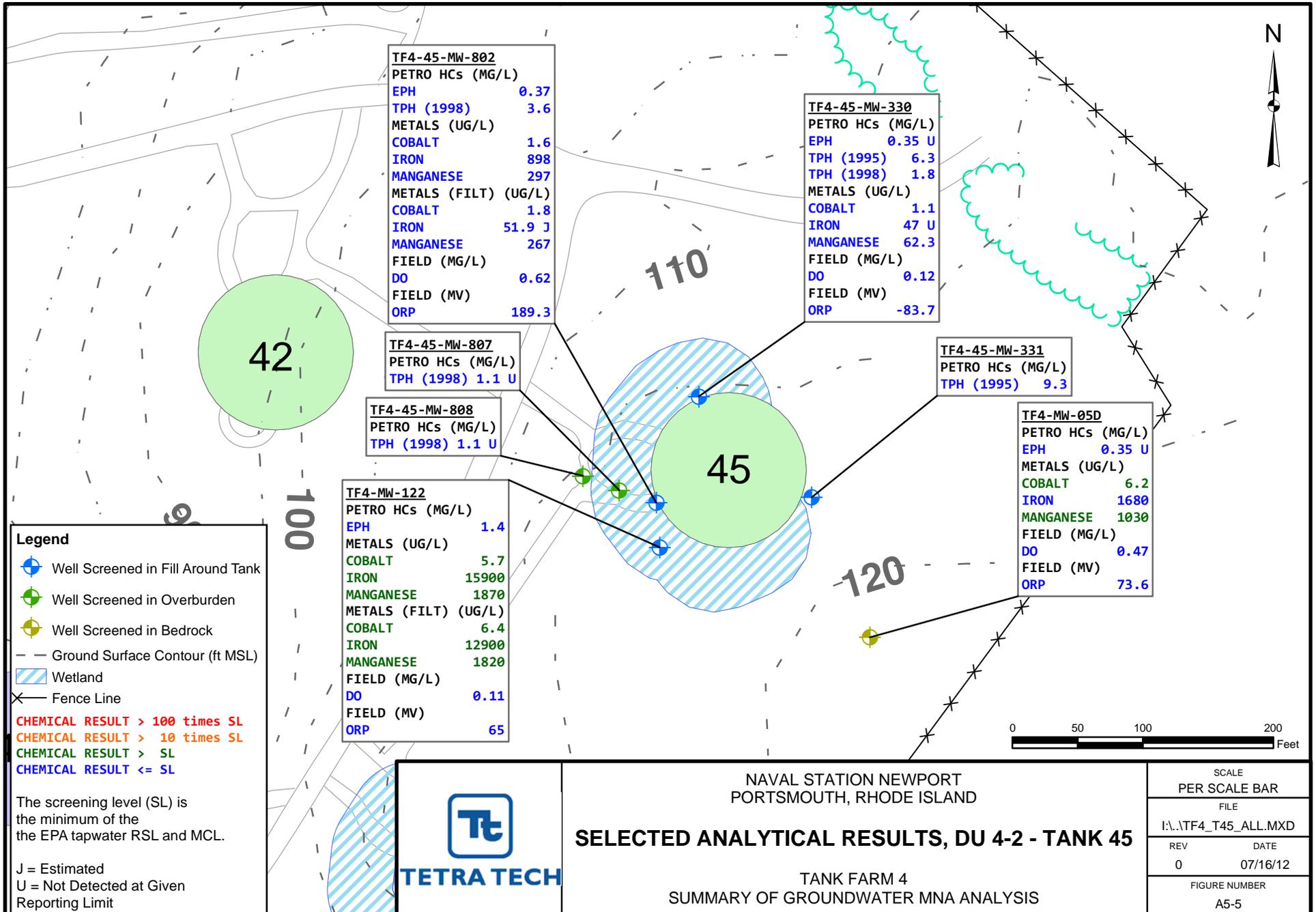


NAVAL STATION NEWPORT
 PORTSMOUTH, RHODE ISLAND

SELECTED ANALYTICAL RESULTS, DU 4-2 - TANK 42

TANK FARM 4
 SUMMARY OF GROUNDWATER MNA ANALYSIS

SCALE PER SCALE BAR	
FILE I:\...TF4_T42_ALL.MXD	
REV 0	DATE 07/16/12
FIGURE NUMBER A5-4	



TF4-45-MW-802
 PETRO HCs (MG/L)
 EPH 0.37
 TPH (1998) 3.6
 METALS (UG/L)
 COBALT 1.6
 IRON 898
 MANGANESE 297
 METALS (FILT) (UG/L)
 COBALT 1.8
 IRON 51.9 J
 MANGANESE 267
 FIELD (MG/L)
 DO 0.62
 FIELD (MV)
 ORP 189.3

TF4-45-MW-330
 PETRO HCs (MG/L)
 EPH 0.35 U
 TPH (1995) 6.3
 TPH (1998) 1.8
 METALS (UG/L)
 COBALT 1.1
 IRON 47 U
 MANGANESE 62.3
 FIELD (MG/L)
 DO 0.12
 FIELD (MV)
 ORP -83.7

TF4-45-MW-807
 PETRO HCs (MG/L)
 TPH (1998) 1.1 U

TF4-45-MW-331
 PETRO HCs (MG/L)
 TPH (1995) 9.3

TF4-45-MW-808
 PETRO HCs (MG/L)
 TPH (1998) 1.1 U

TF4-MW-05D
 PETRO HCs (MG/L)
 EPH 0.35 U
 METALS (UG/L)
 COBALT 6.2
 IRON 1680
 MANGANESE 1030
 FIELD (MG/L)
 DO 0.47
 FIELD (MV)
 ORP 73.6

TF4-MW-122
 PETRO HCs (MG/L)
 EPH 1.4
 METALS (UG/L)
 COBALT 5.7
 IRON 15900
 MANGANESE 1870
 METALS (FILT) (UG/L)
 COBALT 6.4
 IRON 12900
 MANGANESE 1820
 FIELD (MG/L)
 DO 0.11
 FIELD (MV)
 ORP 65

Legend

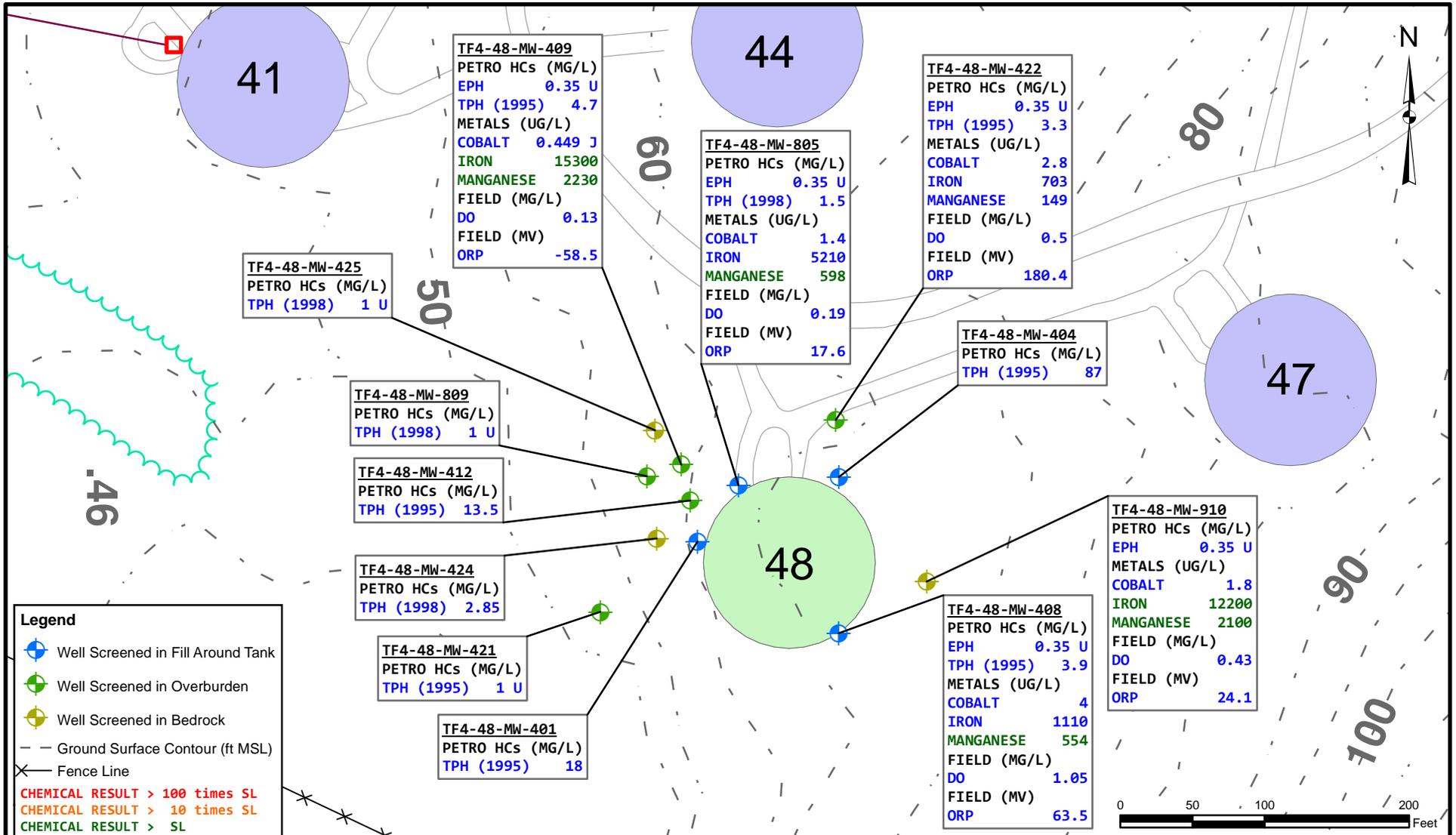
- Well Screened in Fill Around Tank
- Well Screened in Overburden
- Well Screened in Bedrock
- - - Ground Surface Contour (ft MSL)
- Wetland
- Fence Line

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

The screening level (SL) is the minimum of the the EPA tapwater RSL and MCL.

J = Estimated
 U = Not Detected at Given Reporting Limit

	NAVAL STATION NEWPORT PORTSMOUTH, RHODE ISLAND		SCALE PER SCALE BAR	
	SELECTED ANALYTICAL RESULTS, DU 4-2 - TANK 45		FILE I:\TF4_T45_ALL.MXD	
	TANK FARM 4 SUMMARY OF GROUNDWATER MNA ANALYSIS		REV DATE 0 07/16/12	
			FIGURE NUMBER A5-5	



Legend

- ◆ Well Screened in Fill Around Tank
- ◆ Well Screened in Overburden
- ◆ Well Screened in Bedrock
- - - Ground Surface Contour (ft MSL)
- ✕ Fence Line
- CHEMICAL RESULT > 100 times SL
- CHEMICAL RESULT > 10 times SL
- CHEMICAL RESULT > SL
- CHEMICAL RESULT <= SL

The screening level (SL) is the minimum of the the EPA tapwater RSL and MCL.

J = Estimated
 U = Not Detected at Given Reporting Limit



NAVAL STATION NEWPORT
 PORTSMOUTH, RHODE ISLAND

SELECTED ANALYTICAL RESULTS, DU 4-2 - TANK 48

TANK FARM 4
 SUMMARY OF GROUNDWATER MNA ANALYSIS

SCALE PER SCALE BAR	
FILE I:\TF4_T48_ALL.MXD	
REV 0	DATE 07/16/12
FIGURE NUMBER A5-6	

TF4-48-MW-409
 PETRO HCs (MG/L)
 EPH 0.35 U
 TPH (1995) 4.7
 METALS (UG/L)
 COBALT 0.449 J
 IRON 15300
 MANGANESE 2230
 FIELD (MG/L)
 DO 0.13
 FIELD (MV)
 ORP -58.5

TF4-48-MW-805
 PETRO HCs (MG/L)
 EPH 0.35 U
 TPH (1998) 1.5
 METALS (UG/L)
 COBALT 1.4
 IRON 5210
 MANGANESE 598
 FIELD (MG/L)
 DO 0.19
 FIELD (MV)
 ORP 17.6

TF4-48-MW-422
 PETRO HCs (MG/L)
 EPH 0.35 U
 TPH (1995) 3.3
 METALS (UG/L)
 COBALT 2.8
 IRON 703
 MANGANESE 149
 FIELD (MG/L)
 DO 0.5
 FIELD (MV)
 ORP 180.4

TF4-48-MW-425
 PETRO HCs (MG/L)
 TPH (1998) 1 U

TF4-48-MW-809
 PETRO HCs (MG/L)
 TPH (1998) 1 U

TF4-48-MW-412
 PETRO HCs (MG/L)
 TPH (1995) 13.5

TF4-48-MW-424
 PETRO HCs (MG/L)
 TPH (1998) 2.85

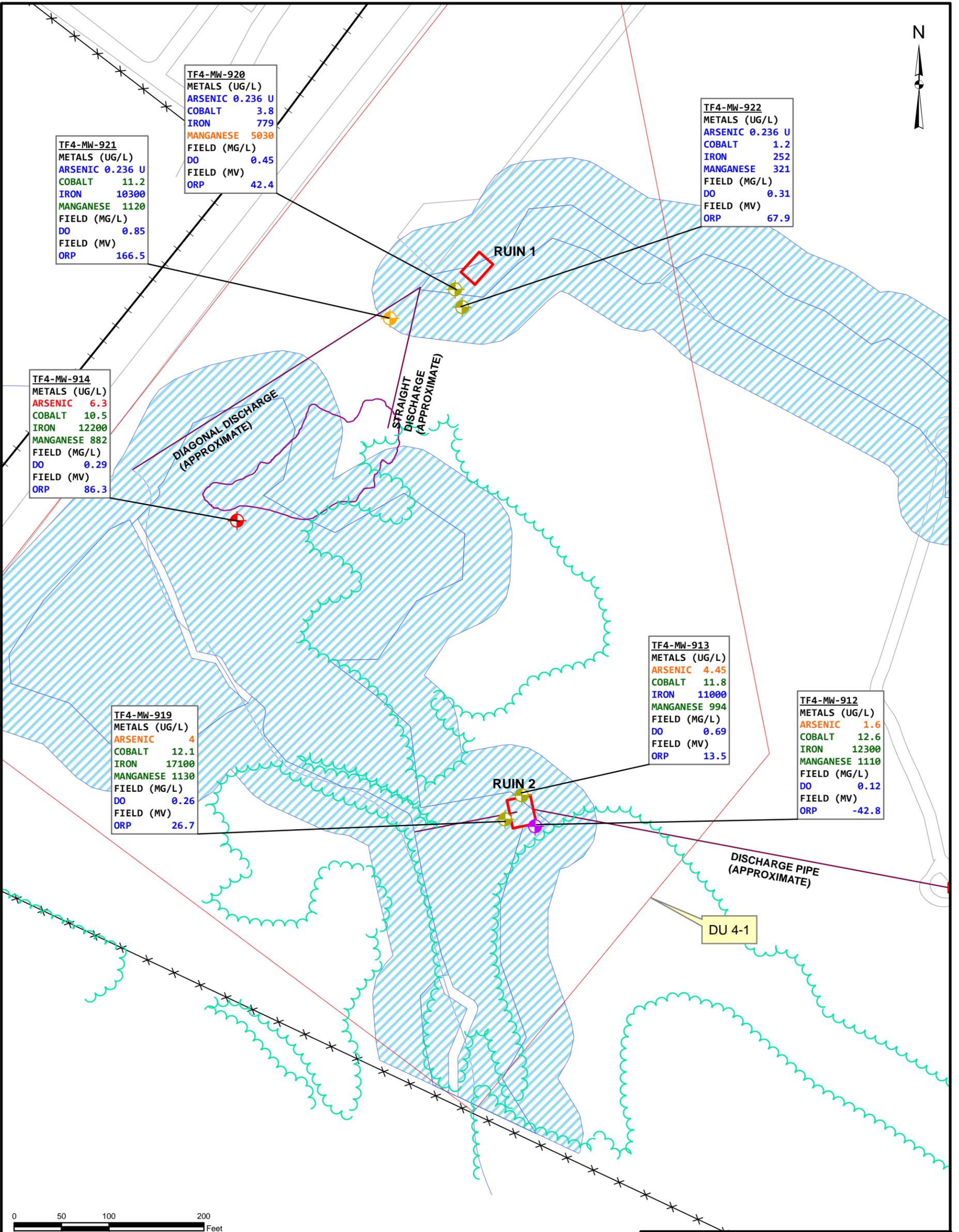
TF4-48-MW-421
 PETRO HCs (MG/L)
 TPH (1995) 1 U

TF4-48-MW-401
 PETRO HCs (MG/L)
 TPH (1995) 18

TF4-48-MW-404
 PETRO HCs (MG/L)
 TPH (1995) 87

TF4-48-MW-910
 PETRO HCs (MG/L)
 EPH 0.35 U
 METALS (UG/L)
 COBALT 1.8
 IRON 12200
 MANGANESE 2100
 FIELD (MG/L)
 DO 0.43
 FIELD (MV)
 ORP 24.1

TF4-48-MW-408
 PETRO HCs (MG/L)
 EPH 0.35 U
 TPH (1995) 3.9
 METALS (UG/L)
 COBALT 4
 IRON 1110
 MANGANESE 554
 FIELD (MG/L)
 DO 1.05
 FIELD (MV)
 ORP 63.5



TF4-MW-921
METALS (UG/L)
ARSENIC 0.236 U
COBALT 11.2
IRON 10300
MANGANESE 1120
FIELD (MG/L)
DO 0.85
FIELD (MV)
ORP 166.5

TF4-MW-920
METALS (UG/L)
ARSENIC 0.236 U
COBALT 3.8
IRON 779
MANGANESE 5030
FIELD (MG/L)
DO 0.45
FIELD (MV)
ORP 42.4

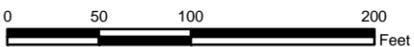
TF4-MW-922
METALS (UG/L)
ARSENIC 0.236 U
COBALT 1.2
IRON 252
MANGANESE 321
FIELD (MG/L)
DO 0.31
FIELD (MV)
ORP 67.9

TF4-MW-914
METALS (UG/L)
ARSENIC 6.3
COBALT 10.5
IRON 12200
MANGANESE 882
FIELD (MG/L)
DO 0.29
FIELD (MV)
ORP 86.3

TF4-MW-919
METALS (UG/L)
ARSENIC 4
COBALT 12.1
IRON 17100
MANGANESE 1130
FIELD (MG/L)
DO 0.26
FIELD (MV)
ORP 26.7

TF4-MW-913
METALS (UG/L)
ARSENIC 4.45
COBALT 11.8
IRON 11000
MANGANESE 994
FIELD (MG/L)
DO 0.69
FIELD (MV)
ORP 13.5

TF4-MW-912
METALS (UG/L)
ARSENIC 1.6
COBALT 12.6
IRON 12300
MANGANESE 1110
FIELD (MG/L)
DO 0.12
FIELD (MV)
ORP -42.8



Legend

- Well Screened in Weathered Bedrock
 - Well Screened in Bedrock
 - Well Screened in Overburden/Weathered Bedrock
 - Well Screened in Overburden/Bedrock
 - Decision Unit Boundary
 - Wetland
- CHEMICAL RESULT > 100 times SL**
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL
- The screening level (SL) is the minimum of the the EPA tapwater RSL and MCL.
- U = Not Detected at Given Reporting Limit



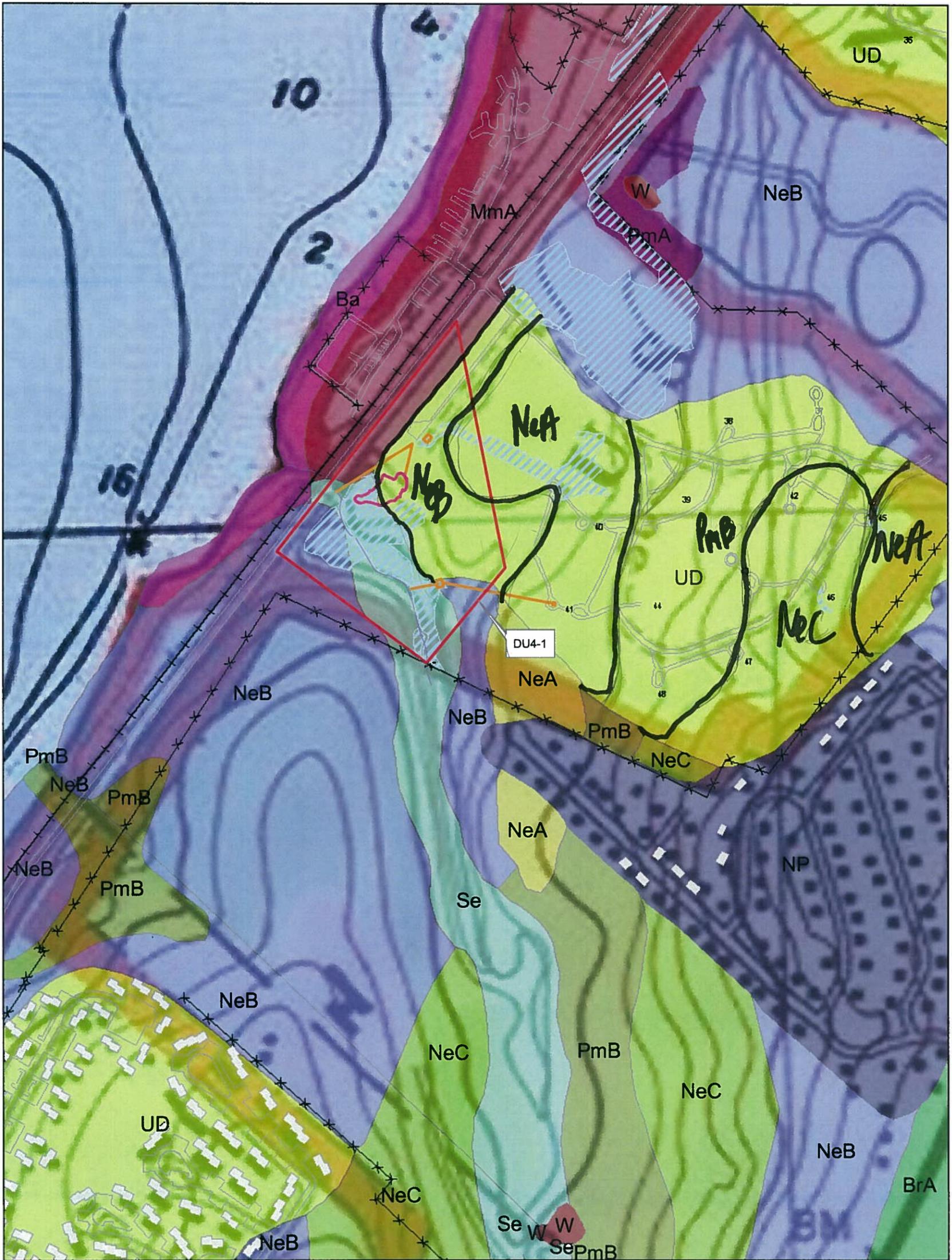
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

DU 4-1 GROUNDWATER MNA ANALYSIS

TANK FARM 4
SUMMARY OF GROUNDWATER ANALYSIS

FILE I:\...TFNE_GW_DU4-1_ALL.MXD	SCALE PER SCALE BAR
FIGURE NUMBER A5-7	REV DATE 0 07/16/12

A6 – HISTORIC SOIL TYPES, TANK FARM 4 AND DU 4-1



LEGEND

- Decision Unit Boundary
- Ruin 1 Straight Discharge Area
- Discharge Pipe
- Wetland
- Railroad Tracks
- Building
- Fence

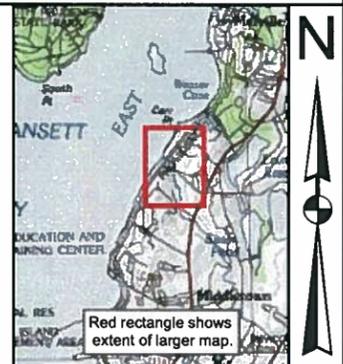
CHEMICAL RESULT >100 times SL
 CHEMICAL RESULT > 50 times SL
 CHEMICAL RESULT > 10 times SL
 CHEMICAL RESULT > 1 time SL

For soil and sediment, the screening level (SL) is the EPA RSL for residential soil.

For groundwater and surface water, the screening level (SL) is the minimum of the EPA tapwater RSL and MCL.

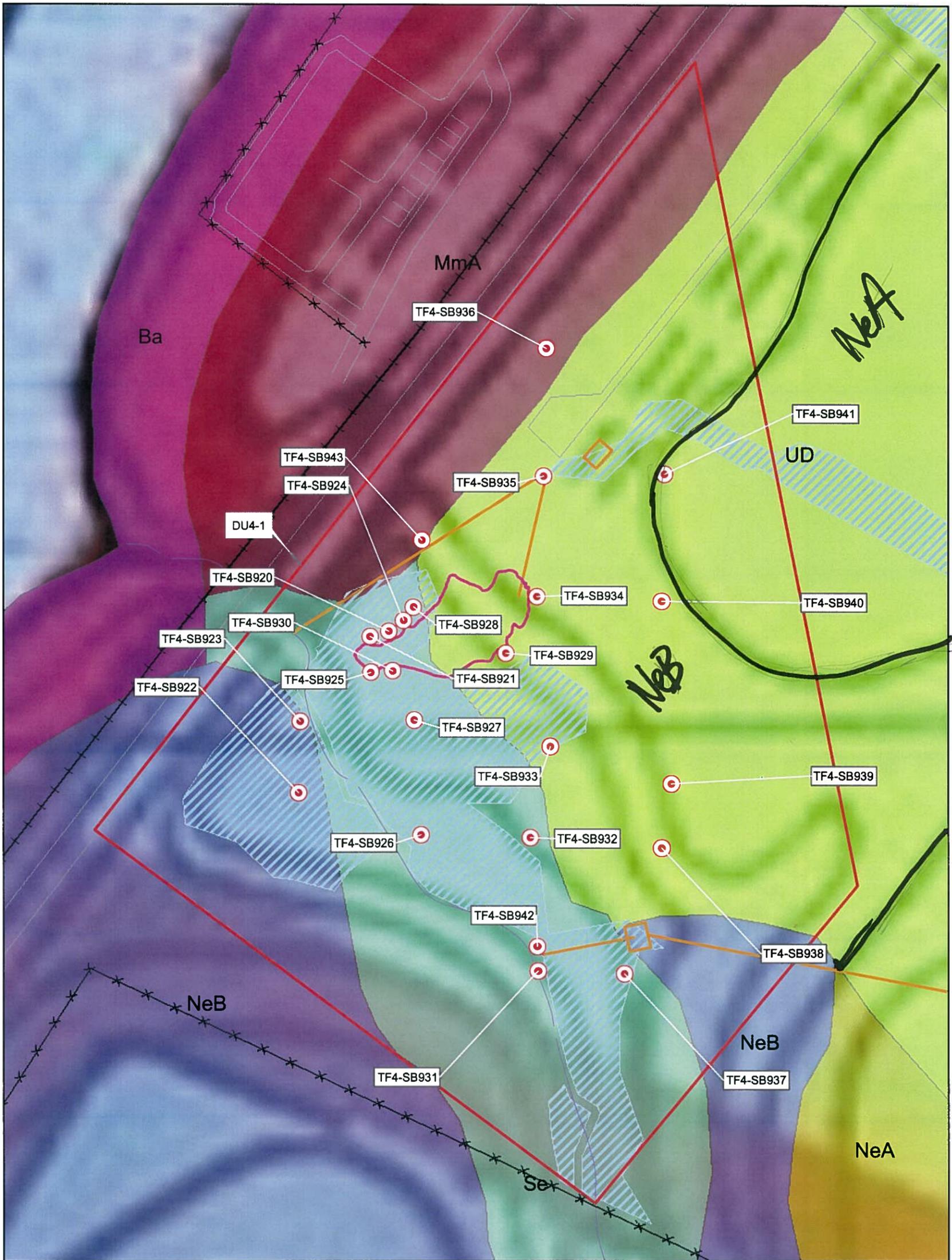
0 50 100 200 300
 Feet

**FIGURE ##
 EXCEEDANCES OF
 SCREENING LEVELS IN
 MATRIX AT
 DECISION UNIT ##
 TANK FARM # 4
 NAVSTA NEWPORT, RHODE ISLAND**



Date: 9/17/2010
 File Name: I:\02698\SI.DR\ .mxd
 Author: GJG

Tt TETRA TECH NUS, INC.



LEGEND

- 2010 Soil Sample Location
- Decision Unit Boundary
- Ruin 1 Straight Discharge Area
- Discharge Pipe
- Wetland
- Railroad Tracks
- Building
- Fence

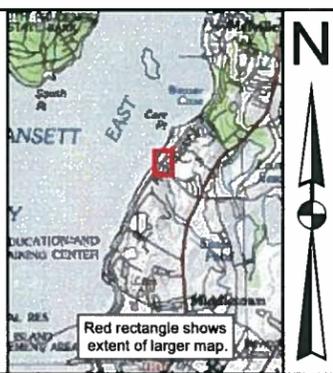
CHEMICAL RESULT >100 times SL
CHEMICAL RESULT > 50 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > 1 time SL

For soil and sediment, the screening level (SL) is the EPA RSL for residential soil.

For groundwater and surface water, the screening level (SL) is the minimum of the EPA tapwater RSL and MCL.



FIGURE #-#
EXCEEDANCES OF
SCREENING LEVELS IN
MATRIX AT
DECISION UNIT #-#
TANK FARM # 4
NAVSTA NEWPORT, RHODE ISLAND



Date: 9/17/2010
 File Name: I:\02698\SI.DR\ .mxd
 Author: GJG

A7 – LABORATORY DATA REPORT, RESAMPLE OF MW-913



**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
CTO WE69 NS NEWPORT, TANK FARM 4
SF7974**

Sample Receipt

The following sample was received on November 09, 2012 and was logged in under Katahdin Analytical Services work order number SF7974 for a hardcopy due date of November 28, 2012.

KATAHDIN	TTNUS
<u>Sample No.</u>	<u>Sample Identification</u>
SF7974-1	TF4-GW-MW913-110812
SF7974-2	TF4-GW-DUP01-110812

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SF7974 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8082 Analysis

Sample SF7974-1 had low a recovery for TCX on channel A, which was outside the laboratory established acceptance limits. Since the recoveries were acceptable on the confirmation channel, the sample was not reextracted.

8081B Analysis

There were no protocol deviations or observations noted by the organics laboratory staff for this analysis.

000002



I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
112712

Leslie Dimond
Quality Assurance Officer

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SF7974-1
Client ID: TF4-GW-MW913-11081
Project: CTO WE69 NS Newport, Tan
SDG: SF7974
Lab File ID: 1FK00075.1

Sample Date: 08-NOV-12
Received Date: 09-NOV-12
Extract Date: 12-NOV-12
Extracted By: JH
Extraction Method: SW846 3510
Lab Prep Batch: WG116333

Analysis Date: 15-NOV-12
Analyst: JLP
Analysis Method: SW846 8081B
Matrix: AQ
% Solids: NA
Report Date: 23-NOV-12

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
alpha-BHC	U	0.026	ug/L	1	.05	0.052	0.0071	0.026
Gamma-BHC	U	0.026	ug/L	1	.05	0.052	0.0074	0.026
Heptachlor	U	0.026	ug/L	1	.05	0.052	0.0082	0.026
Aldrin	U	0.026	ug/L	1	.05	0.052	0.0076	0.026
beta-BHC	U	0.026	ug/L	1	.05	0.052	0.0065	0.026
delta-BHC	U	0.026	ug/L	1	.05	0.052	0.013	0.026
Heptachlor Epoxide	U	0.026	ug/L	1	.05	0.052	0.0076	0.026
Endosulfan I	U	0.026	ug/L	1	.05	0.052	0.0066	0.026
Gamma-Chlordane	U	0.026	ug/L	1	.05	0.052	0.0062	0.026
Alpha-Chlordane	U	0.026	ug/L	1	.05	0.052	0.0078	0.026
4,4'-DDE	U	0.052	ug/L	1	.1	0.10	0.0050	0.052
Dieldrin	U	0.052	ug/L	1	.1	0.10	0.0067	0.052
Endrin	U	0.052	ug/L	1	.1	0.10	0.0086	0.052
4,4'-DDD	U	0.052	ug/L	1	.1	0.10	0.0093	0.052
Endosulfan II	U	0.052	ug/L	1	.1	0.10	0.0059	0.052
4,4'-DDT	U	0.052	ug/L	1	.1	0.10	0.0092	0.052
Endrin Aldehyde	U	0.052	ug/L	1	.1	0.10	0.0064	0.052
Endosulfan Sulfate	U	0.052	ug/L	1	.1	0.10	0.0069	0.052
Methoxychlor	U	0.26	ug/L	1	.5	0.52	0.0086	0.26
Endrin Ketone	U	0.052	ug/L	1	.1	0.10	0.0080	0.052
Toxaphene	U	0.52	ug/L	1	1	1.0	0.18	0.52
Tetrachloro-M-Xylene		60.7	%					
Decachlorobiphenyl		71.1	%					

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SF7974-1
Client ID: TF4-GW-MW913-11081
Project: CTO WE69 NS Newport, Tan
SDG: SF7974
Lab File ID: 7FK161.D

Sample Date: 08-NOV-12
Received Date: 09-NOV-12
Extract Date: 12-NOV-12
Extracted By: JH
Extraction Method: SW846 3510
Lab Prep Batch: WG116331

Analysis Date: 13-NOV-12
Analyst: CB
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 16-NOV-12

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	0.26	ug/L	1	.5	0.52	0.15	0.26
Aroclor-1221	U	0.26	ug/L	1	.5	0.52	0.21	0.26
Aroclor-1232	U	0.26	ug/L	1	.5	0.52	0.092	0.26
Aroclor-1242	U	0.26	ug/L	1	.5	0.52	0.18	0.26
Aroclor-1248	U	0.26	ug/L	1	.5	0.52	0.21	0.26
Aroclor-1254	U	0.26	ug/L	1	.5	0.52	0.084	0.26
Aroclor-1260	U	0.26	ug/L	1	.5	0.52	0.18	0.26
Tetrachloro-M-Xylene		68.7	%					
Decachlorobiphenyl		65.1	%					

Katahdin Analytical Services, Inc.

Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SF7974	KIMS Review By: JO	Received By: DM
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 11-9-12 1615

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.		✓			Temp (°C): 4.2
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) may not meet certain regulatory requirements and may invalidate certain data.
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles free of headspace: Aqueous: No bubble larger than a pea Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2 Sulfide - >9 Cyanide – pH >12				✓ ✓ ✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

A8 - GROUNDWATER FLUSHING CALCULATIONS, DU4-1 - TANK FARM 4

CLIENT: NAVFAC		JOB NUMBER: 112g02698	
SUBJECT: Tank Farm 4, DU-4-1, Estimate Time To Cleanup of Groundwater via Natural Attenuation			
BASED ON:		DRAWING NUMBER:	
BY: Date:	D. Seiken 1/31/13	CHECKED BY: Date:	APPROVED BY: DATE:

Hydraulic conductivity (K) data from slug tests
(Site Investigation Report Tanks 38, 42, 45 and 48, Brown and Root April 1996)

Bedrock

well ID	K (ft/day)
MW-424	2.95
MW-425	1.32
MW-1D	0.06
MW-3D	0.03
MW-5D	0.04

Geometric Mean K= 0.19

Overburden

well ID	K (ft/day)
MW-409	3.71
MW-421	1.66
MW-1S	0.23
MW-5S	0.23

Geometric Mean K = 0.76

Effective Porosity (n) Data
(Groundwater, Freeze and Cherry, 1979)

n of shale = 0.05

n of silt/sand/gravel = 0.35

Hydraulic Gradient (i) = 0.05
(Data Gaps Assessment Report for IR Site 12 and IR Site 13, Category 1 Areas, Tetra Tech (August, 2012)

Length of Travel of groundwater from eastern edge of DU-4-1 to Normans Brook = 600 ft

Bedrock

$V=Ki/n$
 $V = 0.19 (0.05) / 0.05$
 $V= 0.19 \text{ ft/day}$

Overburden

$V=Ki/n$
 $V= 0.76 (0.05) /0.35$
 $V= 0.11 \text{ ft/day}$

T=Time for groundwater from outside DU-4-1 to travel to Normans Brook

$T= 600 \text{ ft} / 0.19 \text{ ft/day} = 8.7 \text{ years}$

$T= 600 \text{ ft} / 0.11 \text{ ft/day} = 14.9 \text{ years}$

Assume 3 flushes of groundwater will achieve PRGs

Bedrock cleanup Time = 26 years

Overburden cleanup time = 45 years

APPENDIX B

CALCULATION OF PRELIMINARY REMEDIATION GOALS

B1 – CALCULATION OF PRELIMINARY REMEDIATION GOALS – SOIL AND GROUNDWATER

DEVELOPMENT OF PRELIMINARY REMEDIAL GOALS

1.0 INTRODUCTION

This appendix describes the methodology used to develop preliminary remedial goals (PRGs) for the chemicals of concern (COCs) at Tank Farm 4. The following guidance was used in the development of the PRGs:

- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals) (USEPA, December 1991).
- Guidance for Characterizing Background and Chemical Concentrations in Soil for CERCLA Sites (USEPA, September 2002).
- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) (USEPA, July 2004).
- Guidelines for Carcinogen Risk Assessment (USEPA, March 2005).
- Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, March 2005).
- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment) (USEPA, January 2009).
- U.S. Navy Policy on the Use of Background Chemical Levels (January 2004).
- U.S. Navy Human Health Risk Assessment Guidance (December 2008).

COCs were identified in the human health risk assessment (HHRA) (Tetra Tech, January 2011) for those media with incremental lifetime cancer risks (ILCR) greater than 1×10^{-5} or a hazard index of 1. Chemicals were not considered as significant contributors to risk and therefore are not included as COCs if their individual carcinogenic risk contribution was less than 1×10^{-6} and their non-carcinogenic HQ was less than 0.1. Also chemicals identified as being within naturally occurring levels were not retained as COCs. Table 1 presents the COCs for Tank Farm 4.

Carcinogenic PAHs, arsenic, and manganese were identified as COCs for direct contact with soil at Tank Farm 4. Endrin Aldehyde, arsenic, cobalt, iron, and manganese were identified as COCs for direct

contact with groundwater. Construction workers, recreational users, and hypothetical residents were identified as the receptors of concern for exposures to soil. Hypothetical residents were identified as receptors of concern for exposures to groundwater.

No COCs were identified for surface water and sediment at Tank Farm 4.

Section 2 presents the methodology for deriving the preliminary PRGs for soil. Section 3 presents the methodology for deriving preliminary PRGs for groundwater.

2.0 DEVELOPMENT OF PRELIMINARY REMEDIAL GOALS FOR SOIL

2.1 Direct Contact with Soil

It was assumed that receptors could be exposed to chemicals in soil through incidental ingestion, dermal contact, and inhalation of fugitive dust. No volatile COCs were identified in soil, therefore inhalation of volatile emissions from soil was not considered in the calculation of the PRGs. The equation for deriving a carcinogenic PRG for exposures to soil is:

$$PRG_{\text{Soil}} = \frac{TCR \cdot AT}{EF \cdot ED \cdot \left[\frac{IR_{\text{Soil}} \cdot FI \cdot CF}{BW} \cdot CSF_{\text{oral}} + \frac{SA \cdot AF \cdot ABS \cdot CF}{BW} \cdot CSF_{\text{derm}} + \frac{1}{PEF} \cdot ET \cdot IUR \right]}$$

The equation for a noncarcinogenic RGO for exposures to soil by is:

$$PRG_{\text{Soil}} = \frac{THI \cdot AT}{EF \cdot ED \cdot \left[\frac{IR_{\text{Soil}} \cdot FI \cdot CF}{BW} \cdot \frac{1}{RfD_{\text{oral}}} + \frac{SA \cdot AF \cdot ABS \cdot CF}{BW} \cdot \frac{1}{RfD_{\text{derm}}} + \frac{1}{PEF} \cdot ET \cdot \frac{1}{RfC} \right]}$$

The equation for lifetime exposures to carcinogens in soil is:

$$PRG_{\text{Soil}} = \frac{TCR \cdot AT}{EF \cdot \left[\left(\frac{IR_{\text{Soil-child}} \cdot FI_{\text{child}} \cdot ED_{\text{child}}}{BW_{\text{child}}} + \frac{IR_{\text{Soil-adult}} \cdot FI_{\text{adult}} \cdot ED_{\text{adult}}}{BW_{\text{adult}}} \right) \cdot CF \cdot CSF_{\text{oral}} + \left(\frac{SA_{\text{child}} \cdot AF_{\text{child}} \cdot ED_{\text{child}}}{BW_{\text{child}}} + \frac{SA_{\text{adult}} \cdot AF_{\text{adult}} \cdot ED_{\text{adult}}}{BW_{\text{adult}}} \right) \cdot ABS \cdot CF \cdot CSF_{\text{derm}} + \left(\frac{1}{PEF} \right) \cdot (ET_{\text{child}} \cdot ED_{\text{child}} + ET_{\text{adult}} \cdot ED_{\text{adult}}) \cdot IUR \right]}$$

And the equation for mutagenic chemicals is:

$$PRG_{\text{Soil}} = \frac{TCR \cdot AT}{Mut_Int_{0-2} \cdot ADAF_{0-2} + Mut_Int_{2-6} \cdot ADAF_{2-6} + Mut_Int_{6-16} \cdot ADAF_{6-16} + Mut_Int_{16-30} \cdot ADAF_{16-30}}$$

Mut_Int is the exposure intake for each age group and is calculated by:

$$\text{Mut_Int} = \text{EF} \cdot \text{ED} \cdot \left[\frac{\text{IR}_{\text{Soil}} \cdot \text{FI} \cdot \text{CF}}{\text{BW}} \cdot \text{CSF}_{\text{oral}} + \frac{\text{SA} \cdot \text{AF} \cdot \text{ABS} \cdot \text{CF}}{\text{BW}} \cdot \text{CSF}_{\text{derm}} + \frac{1}{\text{PEF}} \cdot \text{ET} \cdot \text{IUR} \right]$$

where:

IR	=	ingestion rate (mg/day)
FI	=	fraction ingested from contaminated source (dimensionless)
EF	=	exposure frequency (days/yr)
ED	=	exposure duration (yr)
SA	=	skin surface area available for contact (cm ²)
AF	=	skin adherence factor (mg/cm ² /event)
ABS	=	absorption factor (dimensionless)
EV	=	event frequency (events/day)
CF	=	conversion factor (1 x 10 ⁻⁶ kg/mg)
BW	=	body weight (kg)
AT	=	averaging time (days); for noncarcinogens, AT = ED x 365 days/yr; for carcinogens, AT = 70 yr x 365 days/yr
PEF	=	Particulate emission factor, m ³ /kg
CSF _{oral}	=	oral cancer slope factor, (mg/kg/day) ⁻¹
CSF _{derm}	=	dermal cancer slope factor, (mg/kg/day) ⁻¹
IUR	=	inhalation unit risk, (µg/m ³) ⁻¹
RfD _{oral}	=	oral reference dose, mg/kg/day
RfD _{derm}	=	dermal reference dose, mg/kg/day
RfC	=	Reference concentration, mg/m ³
ADAF	=	Age dependent adjustment factor, (unitless)

The exposure assumptions used to develop PRGs for exposures to soil are the same exposure assumptions that were used in the HHRA and are presented in Table 2. Toxicity criteria used in the development of the PRGs are presented in Tables 3 to 6. The preliminary PRGs for soil are presented in Table 7 for Tank Farm 4. Also included in Table 7 are the background 95 percent upper prediction limits (UPL), the USEPA Regional Screening Levels (RSLs) (USEPA, May 2012), and RIDEM Direct Exposure Criteria (DECs) for residential soil (RIDEM, November 2011). The RSLs are presented for informational purposes only and were not used as PRGs. Copies of the PRG calculations are included in Attachment A.

2.2 Calculation of Background Upper Prediction Limits

Background data is available for the four soil types found at Tank Farm 4; Merrimack mucky slit loam (MmA), Newport silt loam (Ne), Pittstown silt loam (PmA), and Stissing silt loam (Se). Upper prediction limits were calculated for each of the individual soil type and for all soil type combined using USEPA's ProUCL Version 4.1.01. The calculated UPLs are presented in Table 8. Copies of the ProUCL printouts are included in Attachment B. Since it is possible for an individual to be exposed to all four soil types the UPL for the combined soil types was selected as the background concentration for inclusion in Table 7.

3.0 DEVELOPMENT OF PRELIMINARY REMEDIAL GOALS FOR GROUNDWATER

It was assumed hypothetical residents could be exposed to COCs in groundwater ingestion, dermal contact, and inhalation of chemicals that have volatilized from groundwater. The equation for deriving a groundwater PRG for carcinogens is:

$$PRG_{GW} = \frac{TCR \cdot AT}{EF \cdot ED \cdot \left[\frac{IR_{GW}}{BW} \cdot CSF_{oral} + \frac{DA_{event} \cdot EV \cdot SA}{BW} \cdot CSF_{derm} + \frac{ET}{VF} \cdot IUR \right]}$$

And the equation for noncarcinogens is:

$$PRG_{GW} = \frac{THI \cdot AT}{EF \cdot ED \cdot \left[\frac{IR_{GW}}{BW} \cdot \frac{1}{RfD_{oral}} + \frac{DA_{event} \cdot EV \cdot SA}{BW} \cdot \frac{1}{RfD_{derm}} + \frac{ET}{VF} \cdot \frac{1}{RfC} \right]}$$

The equation for lifetime exposures to carcinogens in groundwater is:

$$PRG_{GW} = \frac{TCR \cdot AT}{EF \cdot \left[\left(\frac{IR_{GW-child} \cdot ED_{child}}{BW_{child}} + \frac{IR_{GW-adult} \cdot ED_{adult}}{BW_{adult}} \right) \cdot CSF_{oral} + \left(\frac{DA_{event-child} \cdot EV_{child} \cdot SA_{child} \cdot ED_{child}}{BW_{child}} + \frac{DA_{event-adult} \cdot EV_{adult} \cdot SA_{adult} \cdot ED_{adult}}{BW_{adult}} \right) \cdot CSF_{derm} \right] + \frac{1}{VF} \cdot (ET_{child} \cdot ED_{child} + ET_{adult} \cdot ED_{adult}) \cdot IUR}$$

And the equation for mutagenic chemicals is:

$$PRG_{GW} = \frac{TCR \cdot AT}{Mut_Int_{0-2} \cdot ADAF_{0-2} + Mut_Int_{2-6} \cdot ADAF_{2-6} + Mut_Int_{6-16} \cdot ADAF_{6-16} + Mut_Int_{16-30} \cdot ADAF_{16-30}}$$

Mut_Int is the exposure intake for each age group and is calculated by:

$$\text{Mut_Int} = \text{EF} \cdot \text{ED} \left[\frac{\text{IR}_{\text{GW}}}{\text{BW}} \cdot \text{CSF}_{\text{oral}} + \frac{\text{DA}_{\text{event}} \cdot \text{EV} \cdot \text{SA}}{\text{BW}} \cdot \text{CSF}_{\text{derm}} + \text{VF} \cdot \text{ET} \cdot \text{IUR} \right]$$

where

IR	=	ingestion rate for groundwater (L/day)
EF	=	exposure frequency (days/yr)
ED	=	exposure duration (yr)
DA _{event}	=	dermally absorbed dose per event (mg/cm ² -event)
EV	=	event frequency (events/day)
ED	=	exposure duration (yr)
ET	=	exposure time (hours/day)
EF	=	exposure frequency (days/yr)
SA	=	skin surface area available for contact (cm ²)
BW	=	body weight (kg)
AT	=	averaging time (days); for noncarcinogens, AT = ED x 365 days/yr; for carcinogens, AT = 70 yrs x 365 days/yr
VF	=	volatilization factor, m ³ /kg
CSF _{oral}	=	oral cancer slope factor, (mg/kg/day) ⁻¹
CSF _{derm}	=	dermal cancer slope factor, (mg/kg/day) ⁻¹
IUR	=	inhalation unit risk, (µg/m ³) ⁻¹
RfD _{oral}	=	oral reference dose, mg/kg/day
RfD _{derm}	=	dermal reference dose, mg/kg/day
RfC	=	Reference concentration, mg/m ³
ADAF	=	Age dependent adjustment factor, (unitless)

The exposure assumptions used to develop PRGs for exposures to groundwater are presented in Table 2. Toxicity criteria used in the development of the PRGs are presented in Tables 3 to 6. The preliminary PRGs for groundwater are presented in Table 9 for Tank Farm 4. Also included in Table 9 are USEPA Regional Screening Levels (RSLs) (USEPA, May 2012), USEPA Maximum Contaminant Levels (MCLs) (USEPA April 2012), and RIDEM GA groundwater objectives (RIDEM, November 2011). The RSLs are presented for informational purposes only and were not used as PRGs. Copies of the PRG calculations are included in Attachment C.

REFERENCES

Rhode Island Department of Environmental Management (RIDEM), Office of Waste Management, November 2011. Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases.

Tetra Tech, January 2011. Data Gaps Assessment Report for Installation Restoration for Site 12 (Tank Farm 4) and 13 (Tank Farm 5), Naval Station Newport, Rhode Island. Prepared for the Naval Facilities Engineering Command, Mid-Atlantic.

USEPA, April 2012. 2012 Edition of the Drinking Water Standards and Health Advisories, EPA 820-S-12-001, Office of Water, Washington, D.C.

USEPA, May 2012. Regional Screening Levels for Chemical Contaminants at Superfund Sites, prepared by Oak Ridge National Laboratory. <http://epa-prgs.ornl.gov/chemicals/index.shtml>.

**TABLE 1
CHEMICALS RETAINED AS CHEMICALS OF CONCERN
TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Chemical	Receptor								
	Construction Workers	Industrial Workers	Adolescent Trespassers	Child Recreational Users	Adult Recreational Users	Lifelong Recreational Users	Child Residents	Adult Residents	Lifelong Residents
Surface Soil									
Carcinogenic PAHs						X	X	X	X
Arsenic							X	X	X
All Soil									
Carcinogenic PAHs							X	X	X
Arsenic							X	X	X
Manganese	X								
Groundwater									
Endrin Aldehyde							X		
Arsenic							X	X	X
Cobalt							X		
Iron							X		
Manganese							X	X	
Surface Water									
No COCs identified for surface water.									
Sediment									
No COCs identified for sediment.									

A chemical is retained as a COC if it contributed to a total cancer risk greater than 1×10^{-4} or to a target organ hazard index greater than 1.

Source: Table 6-37 from Data Gap Assessment (DGA) Report for Installation Restoration Site 12 (Tank Farm 4) and 13 (Tank Farm 5) (Tetra Tech NUS, January 2011).

TABLE 2
SUMMARY OF EXPOSURE INPUT PARAMETERS
REASONABLE MAXIMUM EXPOSURES
TANK FARM 4 AND 5
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 1 OF 2

Parameter Code	Exposure Parameter	Construction Worker	Industrial Worker	Child Recreational User	Adult Recreational User	Child Resident	Adult Resident
All Exposures							
ED	Exposure Duration (years)	1 ⁽¹⁾	25 ^(2,3)	6 ⁽²⁾	24 ⁽²⁾	6 ^(2,3)	24 ^(2,3)
BW	Body Weight (kg)	70 ⁽²⁾	70 ^(2,3)	15 ⁽²⁾	70 ⁽²⁾	15 ^(2,3)	70 ^(2,3)
AT-N	Averaging Time (Non-Cancer) (days)	365 ⁽⁴⁾	9,125 ^(3,4)	2,190 ⁽⁴⁾	8,760 ⁽⁴⁾	2,190 ^(3,4)	8,760 ^(3,4)
AT-C	Averaging Time (Cancer) (days)	25,550 ⁽⁴⁾	25,550 ^(3,4)	25,550 ⁽⁴⁾	25,550 ⁽⁴⁾	25,550 ^(3,4)	25,550 ^(3,4)
Incidental Ingestion/Dermal Contact with Soil							
IR	Ingestion Rate (mg/day)	330 ⁽²⁾	100 ⁽²⁾	200 ⁽²⁾	100 ⁽²⁾	200 ^(2,3)	100 ^(2,3)
EF	Exposure Frequency (days/year)	130 ⁽¹⁾	250 ^(3,5)	48 ⁽⁶⁾	48 ⁽⁶⁾	350 ^(2,3)	350 ^(2,3)
FI	Fraction Ingested (unitless)	1	1	1	1	1	1
SA	Skin Surface Available for Contact (cm ²)	3,300 ⁽⁵⁾	3,300 ⁽⁵⁾	2,800 ⁽⁵⁾	5,700 ⁽⁵⁾	2,800 ⁽⁵⁾	5,700 ⁽⁵⁾
AF	Soil to Skin Adherence Factor (mg/cm ² /event)	0.3 ⁽⁵⁾	0.2 ⁽⁵⁾	0.2 ⁽⁵⁾	0.07 ⁽⁵⁾	0.2 ⁽⁵⁾	0.07 ⁽⁵⁾
ABS	Absorption Factor (unitless)	chemical-specific ⁽⁵⁾					
CF	Conversion Factor (kg/mg)	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
Inhalation Fugitive Dust/Volatile Emissions from Soil							
ET	Exposure Time (hours/day)	8 ⁽¹⁾	8 ⁽⁷⁾	8 ⁽⁶⁾	8 ⁽⁶⁾	24	24
EF	Exposure Frequency (days/year)	130 ⁽¹⁾	250 ⁽⁵⁾	48 ⁽⁶⁾	48 ⁽⁶⁾	350 ^(2,3)	350 ^(2,3)
PEF	Particulate Emission Factor (m ³ /kg)	1.4E+06 ⁽⁸⁾	1.1E+10 ⁽⁹⁾				
Ingestion/Dermal Contact with Groundwater							
IR	Ingestion Rate (L/day)	NA	NA	NA	NA	1 ⁽²⁾	2 ⁽²⁾
EF	Exposure Frequency (days/year)	NA	NA	NA	NA	350 ⁽²⁾	350 ⁽²⁾
ET	Exposure Time (hours/day)	NA	NA	NA	NA	1.0 ⁽⁵⁾	0.58 ⁽⁵⁾
EV	Event Frequency (events/day)	NA	NA	NA	NA	1 ⁽¹⁰⁾	1 ⁽¹⁰⁾
SA	Skin Surface Available for Contact (cm ²)	NA	NA	NA	NA	6,600 ⁽⁵⁾	18,000 ⁽⁵⁾
	Kp (cm/hour), t* (hour/event), □(hour), and B (unitless)	NA	NA	NA	NA	chemical-specific ⁽⁵⁾	chemical-specific ⁽⁵⁾
Inhalation of Volatile Emissions from Groundwater							
ET	Exposure Time (hours/day)	NA	NA	NA	NA	NA	NA
EF	Exposure Frequency (days/year)	NA	NA	NA	NA	NA	NA
VF	Volatilization Factor (L/m ³)	NA	NA	NA	NA	0.5 ⁽¹¹⁾	0.5 ⁽¹¹⁾

TABLE 2
SUMMARY OF EXPOSURE INPUT PARAMETERS
REASONABLE MAXIMUM EXPOSURES
TANK FARM 4 AND 5
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 2 OF 2

Notes:

- 1 - Assumes a 26 week construction project over a course of one year.
- 2 - USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.
- 3 - Rhode Island Department of Environmental Management, DEM-DSR-01-93, February 2004.
- 4 - USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.
- 5 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. PA/540/R/99/005.
- 6 - Assumes 4 days a week for 12 weeks.
- 7 - Length of a typical work day.
- 8 - USEPA, 2002: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9365.4-24.
- 9 - USEPA, 2012: Soil Screening Guidance calculation Internet site at http://risk.lsd.ornl.gov/calc_start.htm. Site-specific values for Hartford, Connecticut.
- 10 - Professional judgment.
- 11 - USEPA, 1991. Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part B, Development of Risk-Based Preliminary Remediation Goals.

**TABLE 3
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal ⁽¹⁾	Absorbed RfD for Dermal ⁽²⁾		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Semivolatile Organic Compounds										
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs										
Endrin Aldehyde	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Liver	100/1	IRIS	11/12/2012
Inorganics										
Arsenic	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Skin, Cardiovascular System	3/1	IRIS	11/12/2012
Cobalt	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Blood	NA	PPRTV	8/25/2008
Iron	Chronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	Gastrointestinal System	1.5	PPRTV	9/11/2006
Manganese ⁽³⁾	Chronic	2.4E-02	mg/kg/day	0.04	9.6E-04	mg/kg/day	Central Nervous System	1	IRIS	11/12/2012

Notes:

- 1 - U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.
- 2 - Adjusted dermal RfD = Oral RfD x Oral Absorption Efficiency for Dermal.
- 3 - Adjusted IRIS value in accordance with IRIS.

Definitions:

- IRIS = Integrated Risk Information System
- NA = Not Available.

**TABLE 4
NON-CANCER TOXICITY DATA -- INHALATION
TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD ⁽¹⁾		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
Semivolatile Organic Compounds									
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs									
Endrin Aldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics									
Arsenic	Chronic	1.5E-05	mg/m ³	4.3E-06	(mg/kg/day)	NA	NA	Cal EPA	9/2009
Cobalt	Chronic	6.0E-06	mg/m ³	1.7E-06	(mg/kg/day)	Lungs	NA	PPRTV	8/25/2008
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	Chronic	5.0E-05	mg/m ³	1.4E-05	(mg/kg/day)	Central Nervous System	1000/1	IRIS	11/12/2012

Notes:

1 - Extrapolated RfD = RfC *20m³/day / 70 kg

Definitions:

IRIS = Integrated Risk Information System

NA = Not Applicable

Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, September 2009.

**TABLE 5
CANCER TOXICITY DATA -- ORAL/DERMAL
TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal ⁽¹⁾	Absorbed Cancer Slope Factor for Dermal ⁽²⁾		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Semivolatile Organic Compounds								
Benzo(a)anthracene	7.3E-01	(mg/kg/day) ⁻¹	1	7.3E-01	(mg/kg/day) ⁻¹	B2 / Probable human carcinogen	USEPA(1)	7/1993
Benzo(a)pyrene	7.3E+00	(mg/kg/day) ⁻¹	1	7.3E+00	(mg/kg/day) ⁻¹	B2 / Probable human carcinogen	IRIS	11/12/2012
Benzo(b)fluoranthene	7.3E-01	(mg/kg/day) ⁻¹	1	7.3E-01	(mg/kg/day) ⁻¹	B2 / Probable human carcinogen	USEPA(1)	7/1993
Benzo(k)fluoranthene	7.3E-02	(mg/kg/day) ⁻¹	1	7.3E-02	(mg/kg/day) ⁻¹	B2 / Probable human carcinogen	USEPA(1)	7/1993
Dibenzo(a,h)anthracene	7.3E+00	(mg/kg/day) ⁻¹	1	7.3E+00	(mg/kg/day) ⁻¹	B2 / Probable human carcinogen	USEPA(1)	7/1993
Indeno(1,2,3-cd)pyrene	7.3E-01	(mg/kg/day) ⁻¹	1	7.3E-01	(mg/kg/day) ⁻¹	B2 / Probable human carcinogen	USEPA(1)	7/1993
Pesticides/PCBs								
Endrin Aldehyde	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics								
Arsenic	1.5E+00	(mg/kg/day) ⁻¹	1	1.5E+00	(mg/kg/day) ⁻¹	A / Known human carcinogen	IRIS	11/12/2012
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	11/12/2012

Notes:

1 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

2 - Adjusted cancer slope factor for dermal = Oral cancer slope factor / Oral absorption efficiency for dermal.

USEPA(1) = USEPA, Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons, July 1993, EPA/600/R-93/089.

IRIS = Integrated Risk Information System.

NA = Not Available.

**TABLE 6
CANCER TOXICITY DATA -- INHALATION
TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor ⁽¹⁾		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
Semivolatile Organic Compounds							
Benzo(a)anthracene	1.1E-04	(ug/m ³) ⁻¹	3.9E-01	(mg/kg/day) ⁻¹	NA	Cal EPA	9/2009
Benzo(a)pyrene	1.1E-03	(ug/m ³) ⁻¹	3.9E+00	(mg/kg/day) ⁻¹	NA	Cal EPA	9/2009
Benzo(b)fluoranthene	1.1E-04	(ug/m ³) ⁻¹	3.9E-01	(mg/kg/day) ⁻¹	NA	Cal EPA	9/2009
Benzo(k)fluoranthene	1.1E-04	(ug/m ³) ⁻¹	3.9E-01	(mg/kg/day) ⁻¹	NA	Cal EPA	9/2009
Dibenzo(a,h)anthracene	1.2E-03	(ug/m ³) ⁻¹	4.2E+00	(mg/kg/day) ⁻¹	NA	Cal EPA	9/2009
Indeno(1,2,3-cd)pyrene	1.1E-04	(ug/m ³) ⁻¹	3.9E-01	(mg/kg/day) ⁻¹	NA	Cal EPA	9/2009
Pesticides/PCBs							
Endrin Aldehyde	NA	NA	NA	NA	NA	NA	NA
Inorganics							
Arsenic	4.3E-03	(ug/m ³) ⁻¹	1.5E+01	(mg/kg/day) ⁻¹	A / Known human carcinogen	IRIS	11/12/2012
Cobalt	9.0E-03	(ug/m ³) ⁻¹	3.2E+01	(mg/kg/day) ⁻¹	NA	PPRTV	8/25/2008
Iron	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	D / Not classifiable as to human carcinogenicity	IRIS	11/12/2012

Notes:

1 - Inhalation CSF = Unit Risk * 70 kg / 20m³/day.

Definitions:

IRIS = Integrated Risk Information System.

NA = Not Available.

Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, September 2009.

PPRTV = Provisional Peer Reviewed Toxicity Value.

TABLE 7
PRELIMINARY REMEDIAL GOALS - SOIL
TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 1 OF 2

Chemical	EPA RSL ⁽¹⁾ (mg/kg)	RIDEM Direct Contact Criteria ⁽²⁾ (mg/kg)	Background		Risk-Based-Concentrations ⁽³⁾			
			Surface Soil (mg/kg)	Subsurface Soil (mg/kg)	Target Cancer Risk Level			Hazard Index = 1 (mg/kg)
					10 ⁻⁶ (mg/kg)	10 ⁻⁵ (mg/kg)	10 ⁻⁴ (mg/kg)	
CONSTRUCTION WORKERS								
Manganese	NA	10,000	360	1,030	NA	NA	NA	585
HYPOTHETICAL CHILD RESIDENTS								
Benzo(a)anthracene	0.15	0.9	0.077	NA	0.17	1.7	17	NA
Benzo(a)pyrene	0.015	0.4	0.089	NA	0.017	0.17	1.7	NA
Benzo(b)fluoranthene	0.15	0.9	0.122	NA	0.17	1.7	17	NA
Benzo(k)fluoranthene	1.5	0.9	0.098	NA	1.7	17	170	NA
Dibenzo(a,h)anthracene	0.015	0.4	NA	NA	0.017	0.17	1.7	NA
Indeno(1,2,3-cd)pyrene	0.15	0.9	NA	NA	0.17	1.7	17	NA
Arsenic	0.39	7	19	24	0.56	5.6	56	22
HYPOTHETICAL ADULT RESIDENTS								
Benzo(a)anthracene	0.15	0.9	0.077	NA	1	10	100	NA
Benzo(a)pyrene	0.015	0.4	0.089	NA	0.1	1	10	NA
Benzo(b)fluoranthene	0.15	0.9	0.122	NA	1	10	100	NA
Benzo(k)fluoranthene	1.5	0.9	0.098	NA	10	100	1,000	NA
Dibenzo(a,h)anthracene	0.015	0.4	NA	NA	0.1	1	10	NA
Indeno(1,2,3-cd)pyrene	0.15	0.9	NA	NA	1	10	100	NA
Arsenic	0.39	7	19	24	1.3	13	130	195
HYPOTHETICAL LIFELONG RESIDENTS								
Benzo(a)anthracene	0.15	0.9	0.077	NA	0.15	1.5	15	NA
Benzo(a)pyrene	0.015	0.4	0.089	NA	0.015	0.15	1.5	NA
Benzo(b)fluoranthene	0.15	0.9	0.122	NA	0.15	1.5	15	NA
Benzo(k)fluoranthene	1.5	0.9	0.098	NA	1.5	15	150	NA
Dibenzo(a,h)anthracene	0.015	0.4	NA	NA	0.015	0.15	1.5	NA
Indeno(1,2,3-cd)pyrene	0.15	0.9	NA	NA	0.15	1.5	15	NA
Arsenic	0.39	7	19	24	0.39	3.9	39	NA

TABLE 7
PRELIMINARY REMEDIAL GOALS - SOIL
TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Notes:

1 - EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites, May 2012.

[Cancer benchmark value = 1E-06, Hazard index (HI) = 1].

2 - RIDEM, DEM-DSR-01-93, November 2011.

3 - Risk-based concentrations were calculated using the exposure assumptions presented in the HHRA for Tank Farm 4 and 5. (Tetra Tech, January 2011).

mg/kg - Milligram per kilogram.

NA - Not applicable.

PRG - Preliminary Remediation Goal.

RSL - Regional Screening Levels.

EPA - United States Environmental Protection Agency.

TABLE 8
BACKGROUND CONCENTRATIONS - SOIL
SITE 8 - NAVAL UNDERSEA COMMAND DISPOSAL AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Parameter	Soil Type	Upper Prediction Limit (mg/kg)	
		Surface Soil	Subsurface Soil
Arsenic	MmA	6	5.7
	Ne	17	9.3
	Se	33	33
	PM	17	23
	Combined	19	24
Manganese	MmA	205	663
	Ne	261	448
	Se	304	1,044
	PM	489	1,090
	Combined	360	1,030
Benzo(a)anthracene	Se	NA	NS
	PM	NA	NS
	Combined	0.077	NS
Benzo(a)pyrene	Se	NA	NS
	PM	0.083	NS
	Combined	0.089	NS
Benzo(b)fluoranthene	Se	NA	NS
	PM	0.108	NS
	Combined	0.122	NS
Benzo(k)fluoranthene	Se	NA	NS
	PM	0.0676	NS
	Combined	0.098	NS
Chrysene	Se	NA	NS
	PM	0.093	NS
	Combined	0.113	NS
Dibenzo(a,h)anthracene	Se	NA	NS
	PM	NA	NS
	Combined	NA	NS
Indeno(1,2,3-cd)pyrene	Se	NA	NS
	PM	NA	NS
	Combined	NA	NS

NA = Not Applicable. There are less than four detected samples, meaningful UPLs cannot be calculated.

NS - Subsurface soil samples were not analyzed for PAHs.

**TABLE 9
PRELIMINARY REMEDIAL GOALS - GROUNDWATER
TANK FARM 4
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Chemical	EPA RSL ⁽¹⁾ Tap Water (ug/L)	EPA MCL ⁽²⁾ (ug/L)	RIDEM GA Groundwater Objective ⁽³⁾ (ug/L)	Risk-Based-Concentrations			
				Target Cancer Risk Level			Hazard Index = 1 (ug/L)
				10 ⁻⁶ (ug/L)	10 ⁻⁵ (ug/L)	10 ⁻⁴ (ug/L)	
HYPOTHETICAL CHILD RESIDENTS							
Endrin Aldehyde ⁽⁴⁾	NA	NA	NA	NA	NA	NA	3.7
Arsenic	0.045	10	10	0.12	1.2	12	4.7
Cobalt	11	NA	NA	NA	NA	NA	4.7
Iron	26,000	NA	NA	NA	NA	NA	10,900
Manganese	880	NA	NA	NA	NA	NA	320
HYPOTHETICAL ADULT RESIDENTS							
Endrin Aldehyde ⁽⁴⁾	NA	NA	NA	NA	NA	NA	8.5
Arsenic	0.045	10	10	0.071	0.71	7.1	11
Cobalt	11	NA	NA	NA	NA	NA	11
Iron	26,000	NA	NA	NA	NA	NA	25,400
Manganese	880	NA	NA	NA	NA	NA	775
HYPOTHETICAL LIFELONG RESIDENTS							
Endrin Aldehyde ⁽⁴⁾	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.045	10	10	0.044	0.44	4.4	NA
Cobalt	11	NA	NA	NA	NA	NA	NA
Iron	26,000	NA	NA	NA	NA	NA	NA
Manganese	880	NA	NA	NA	NA	NA	NA

Notes:

- 1 - EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites, May 2012. [Cancer benchmark value = 1E-06, Hazard index (HI) = 1].
- 2 - EPA Primary Drinking Water Standard (EPA, April 2012).
- 3 - RIDEM, DEM-DSR-01-93, November 2011.
- 4 - PRG for endrin aldehyde was derived using toxicity criteria for endrin.

ug/L - Microgram per liter.

NA - Not applicable.

MCL - Maximum Concentration Level.

PRG - Preliminary Remedial Goal.

RIDEM - Rhode Island Department of Environmental Management.

RSL - Regional Screening Levels.

EPA - United States Environmental Protection Agency.

ATTACHMENT A

PRG CALCULATIONS FOR SOIL

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL

SITE NAME: NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
EXPOSURE POINT: TANK FARM 4
EXPOSURE SCENARIO: CONSTRUCTION WORKERS
MEDIA: SURFACE/SUBSURFACE SOIL
DATE: NOVEMBER 12, 2012

THIS SPREADSHEET CALCULATES RISK-BASED CLEANUP GOALS FOR EXPOSURES TO SOIL. THE INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION ROUTES OF EXPOSURE ARE CONSIDERED.

RELEVANT EQUATION:

Carcinogens
$$PRG_{soil} = \frac{TCR}{IntakeFac_{oral} \cdot CSF_{oral} + IntakeFac_{derm} \cdot CSF_{derm} + IntakeFac_{inh} \cdot CSF_{inh}}$$

NonCarcinogens
$$PRG_{soil} = \frac{THI}{\left(\frac{IntakeFac_{oral}}{RfD_{oral}}\right) + \left(\frac{IntakeFac_{derm}}{RfD_{derm}}\right) + \left(\frac{IntakeFac_{inh}}{RfD_{inh}}\right)}$$

$$IntakeFac_{oral} = \frac{IR \times EF \times ED \times FI \times CF}{BW \times AT}$$

$$IntakeFac_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT}$$

$$IntakeFac_{inh} = \frac{EF \times ED \times ET \times (1/VF + 1/PEF)}{AT \times 24 \text{ Hours/day}}$$

Where:

Parameter	Value	Definition
TCR =	1.0E-06	Target Cancer Risk
THI =	1	Target Hazard Index
IR =	330	Soil Ingestion Rate (mg/day)
CF =	1.0E-06	Conversion Factor (kg/mg)
FI =	1	Fraction from contaminated source (unitless)
SA =	3300	Skin surface available for contact (cm ² /day)
AF =	0.3	Soil to skin adherence factor (mg/cm ²)
ABS =	Chemical Specific	Absorption factor (unitless)
ET =	8	Exposure time (hr/day)
EF =	130	Exposure Frequency (days/year)
ED =	1	Exposure Duration (years)
BW =	70	Body Weight (kg)
ATc =	25,550	Averaging time for carcinogenic exposures (days)
ATn =	365	Averaging time for noncarcinogenic exposures (days)
PEF =	1.40E+06	Particulate emission factor (m ³ /kg)
VF =	Chemical Specific	Volatilization Factor (m ³ /kg)

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose		
		Oral (mg/kg/day) ⁻¹	Dermal (mg/kg/day) ⁻¹	Inhalation (ug/m ³) ⁻¹	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m ³)
Manganese	0	NA	NA	NA	1.4E-01	5.6E-03	5.0E-05

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intakes Factors		
	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)
Manganese	2.40E-08	0.00E+00	1.21E-09	1.68E-06	0.00E+00	8.48E-08

CHEMICAL	Soil Concentration	
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg)
Manganese	NA	585

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE 1 OF 2)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 EXPOSURE POINT: TANK FARM 4
 EXPOSURE SCENARIO: LIFELONG RECREATIONAL USERS
 MEDIA: SURFACE/SUBSURFACE SOIL
 DATE: NOVEMBER 12, 2012

THIS SPREADSHEET CALCULATES SCREENING LEVELS FOR EXPOSURES TO SOIL VIA INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION

RELEVANT EQUATIONS:

Carcinogens
$$RBC_{soil} = \frac{TCR}{Intake_{oral} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + EC_{air} \cdot IUR}$$

Noncarcinogens
$$RBC_{soil} = \frac{THI}{\left(\frac{Intake_{oral}}{RID_{oral}} \right) + \left(\frac{Intake_{derm}}{RID_{derm}} \right) + \left(\frac{EC_{air}}{RIC} \right)}$$

$$Intake_{oral} = \frac{IR \times EF \times ED \times FI \times CF}{BW \times AT} \times ADAF$$

$$Intake_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT} \times ADAF$$

$$EC_{air} = \frac{ET \times EF \times ED \times [1/PEF + 1/VF]}{AT \times 24 \text{ hours/day}} \times ADAF$$

Mutagenic
$$RBC_{soil} = \frac{TCR}{Intake_{ages0-2} + Intake_{ages2-6} + Intake_{ages6-16} + Intake_{ages16-30}}$$

INPUT ASSUMPTIONS:						Definition
General	Parameter	Child	Child	Adult	Adult	
		Ages 0 - 2	Ages 2 - 6	Ages 6 - 16	Ages 16 - 30	
	TCR = :	1E-06				Target Cancer Risk
	THI = :	1				Target Hazard Index
	EF = :	48	48	48	48	Exposure Frequency (days/year)
	ED = :	2	4	10	14	Exposure Duration (years)
	BW = :	15	15	70	70	Body Weight (kg)
	ATc = :	25,550				Averaging time for carcinogenic exposures (days)
	ATn = :	730	1,460	3,650	5,110	Averaging time for noncarcinogenic exposures (days)
	CF = :	1.0E-06				Conversion Factor (kg/mg)
	ADAF = :	Chemical Specific				Age Dependent Adjustment Factor
Incidental Ingestion	IR = :	200	200	100	100	Soil Ingestion Rate (mg/day)
	FI = :	1	1	1	1	Fraction from contaminated source (unitless)
Dermal Contact	SA = :	2,800	2,800	5,700	5,700	Skin surface available for contact (cm ² /day)
	AFc = :	0.2	0.2	0.07	0.07	Soil to skin adherence factor (mg/cm ²)
	ABS = :	Chemical Specific				Absorption factor (unitless)
Inhalation	ETc = :	24	24	24	24	Exposure time (hours/day)
	PEF = :	1.10E+10				Particulate emission factor (m ³ /kg)
	VF = :	Chemical Specific				Volatilization factor (m ³ /kg)

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose		
		Oral (mg/kg/day) ⁻¹	Dermal (mg/kg/day) ⁻¹	Inhalation (ug/m ³) ⁻¹	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m ³)
Benzo(a)anthracene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA
Benzo(a)pyrene	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA
Benzo(b)fluoranthene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA
Benzo(k)fluoranthene	0.13	7.3E-02	7.3E-02	1.1E-04	NA	NA	NA
Dibenzo(a,h)anthracene	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA
Benzo(a)pyrene Equivalents	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA

CHEMICAL	Age Dependent Adjustment Factor			
	Ages 0 - 2	Ages 2 - 6	Ages 6 - 16	Ages >16
Benzo(a)anthracene	10	3	3	1
Benzo(a)pyrene	10	3	3	1
Benzo(b)fluoranthene	10	3	3	1
Benzo(k)fluoranthene	10	3	3	1
Dibenzo(a,h)anthracene	10	3	3	1
Indeno(1,2,3-cd)pyrene	10	3	3	1
Benzo(a)pyrene Equivalents	10	3	3	1

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intake Factors		
	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)
Benzo(a)anthracene	9.20E-07	3.53E-07	1.30E-11	1.75E-06	6.38E-07	1.20E-11
Benzo(a)pyrene	9.20E-07	3.53E-07	1.30E-11	1.75E-06	6.38E-07	1.20E-11
Benzo(b)fluoranthene	9.20E-07	3.53E-07	1.30E-11	1.75E-06	6.38E-07	1.20E-11
Benzo(k)fluoranthene	9.20E-07	3.53E-07	1.30E-11	1.75E-06	6.38E-07	1.20E-11
Dibenzo(a,h)anthracene	9.20E-07	3.53E-07	1.30E-11	1.75E-06	6.38E-07	1.20E-11
Indeno(1,2,3-cd)pyrene	9.20E-07	3.53E-07	1.30E-11	1.75E-06	6.38E-07	1.20E-11
Benzo(a)pyrene Equivalents	9.20E-07	3.53E-07	1.30E-11	1.75E-06	6.38E-07	1.20E-11

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE 2 OF 2)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 EXPOSURE POINT: TANK FARM 4
 EXPOSURE SCENARIO: LIFELONG RECREATIONAL USERS
 MEDIA: SURFACE/SUBSURFACE SOIL
 DATE: NOVEMBER 12, 2012

CHEMICAL	Soil Concentration	
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg) ⁽¹⁾
Benzo(a)anthracene	1.1	NA
Benzo(a)pyrene	0.11	NA
Benzo(b)fluoranthene	1.1	NA
Benzo(k)fluoranthene	11	NA
Dibenzo(a,h)anthracene	0.11	NA
Indeno(1,2,3-cd)pyrene	1.1	NA
Benzo(a)pyrene Equivalents	0.11	NA

1 - Noncarcinogenic concentration is based on the child resident.

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 EXPOSURE POINT: TANK FARM 4
 EXPOSURE SCENARIO: CHILD RESIDENTS
 MEDIA: SURFACE/SUBSURFACE SOIL
 DATE: NOVEMBER 12, 2012

THIS SPREADSHEET CALCULATES SCREENING LEVELS FOR EXPOSURES TO SOIL VIA INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION

RELEVANT EQUATIONS:

Carcinogens

$$RBC_{soil} = \frac{TCR}{Intake_{oral} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + EC_{air} \cdot IUR}$$

Noncarcinogens

$$RBC_{soil} = \frac{THI}{\left(\frac{Intake_{oral}}{RID_{oral}} \right) + \left(\frac{Intake_{derm}}{RID_{derm}} \right) + \left(\frac{EC_{air}}{RIC} \right)}$$

$$Intake_{oral} = \frac{IR \times EF \times ED \times FI \times CF}{BW \times AT} \times ADAF$$

$$Intake_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT} \times ADAF$$

$$EC_{air} = \frac{ET \times EF \times ED \times [1/PEF + 1/VF]}{AT \times 24 \text{ hours/day}} \times ADAF$$

Mutagenic

$$RBC_{soil} = \frac{TCR}{Intake_{ages0-2} + Intake_{ages2-6} + Intake_{ages6-16} + Intake_{ages16-30}}$$

INPUT ASSUMPTIONS:				
	Parameter	Child Ages 0 - 2	Child Ages 2 - 6	Definition
General	TCR = :	1E-06		Target Cancer Risk
	THI = :	1		Target Hazard Index
	EF = :	350	350	Exposure Frequency (days/year)
	ED = :	2	4	Exposure Duration (years)
	BW = :	15	15	Body Weight (kg)
	ATc = :	25,550		Averaging time for carcinogenic exposures (days)
	ATn = :	730	1,460	Averaging time for noncarcinogenic exposures (days)
	CF = :	1.0E-06		Conversion Factor (kg/mg)
Incidental Ingestion	ADAF = :	Chemical Specific		Age Dependent Adjustment Factor
	IR = :	200	200	Soil Ingestion Rate (mg/day)
	FI = :	1	1	Fraction from contaminated source (unitless)
Dermal Contact	SA = :	2,800	2,800	Skin surface available for contact (cm ² /day)
	AFc = :	0.2	0.2	Soil to skin adherence factor (mg/cm ²)
	ABS = :	Chemical Specific		Absorption factor (unitless)
Inhalation	ETc = :	24	24	Exposure time (hours/day)
	PEF = :	1.10E+10		Particulate emission factor (m ³ /kg)
	VF = :	Chemical Specific		Volatilization factor (m ³ /kg)

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose			ADAF	
		Oral (mg/kg/day) ⁻¹	Dermal (mg/kg/day) ⁻¹	Inhalation (ug/m ³) ⁻¹	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m ³)	Ages 0 - 2	Ages 2 - 6
Benzo(a)anthracene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA	10	3
Benzo(a)pyrene	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA	10	3
Benzo(b)fluoranthene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA	10	3
Benzo(k)fluoranthene	0.13	7.3E-02	7.3E-02	1.1E-04	NA	NA	NA	10	3
Dibenzo(a,h)anthracene	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA	10	3
Indeno(1,2,3-cd)pyrene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA	10	3
Benzo(a)pyrene Equivalents	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA	10	3
Arsenic	0.03	1.5E+00	1.5E+00	4.3E-03	3.0E-04	3.0E-04	1.5E-05	1	1

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intake Factors		
	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)
Benzo(a)anthracene	5.84E-06	2.13E-06	3.99E-11	1.28E-05	4.65E-06	8.72E-11
Benzo(a)pyrene	5.84E-06	2.13E-06	3.99E-11	1.28E-05	4.65E-06	8.72E-11
Benzo(b)fluoranthene	5.84E-06	2.13E-06	3.99E-11	1.28E-05	4.65E-06	8.72E-11
Benzo(k)fluoranthene	5.84E-06	2.13E-06	3.99E-11	1.28E-05	4.65E-06	8.72E-11
Dibenzo(a,h)anthracene	5.84E-06	2.13E-06	3.99E-11	1.28E-05	4.65E-06	8.72E-11
Indeno(1,2,3-cd)pyrene	5.84E-06	2.13E-06	3.99E-11	1.28E-05	4.65E-06	8.72E-11
Benzo(a)pyrene Equivalents	5.84E-06	2.13E-06	3.99E-11	1.28E-05	4.65E-06	8.72E-11
Arsenic	1.10E-06	9.21E-08	7.47E-12	1.28E-05	1.07E-06	8.72E-11

CHEMICAL	Soil Concentration	
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg)
Benzo(a)anthracene	0.17	NA
Benzo(a)pyrene	0.017	NA
Benzo(b)fluoranthene	0.17	NA
Benzo(k)fluoranthene	1.72	NA
Dibenzo(a,h)anthracene	0.017	NA
Indeno(1,2,3-cd)pyrene	0.17	NA
Benzo(a)pyrene Equivalents	0.017	NA
Arsenic	0.56	22

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 EXPOSURE POINT: TANK FARM 4
 EXPOSURE SCENARIO: ADULT RESIDENTS
 MEDIA: SURFACE/SUBSURFACE SOIL
 DATE: NOVEMBER 12, 2012

THIS SPREADSHEET CALCULATES SCREENING LEVELS FOR EXPOSURES TO SOIL VIA INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION

RELEVANT EQUATIONS:

Carcinogens
$$RBC_{soil} = \frac{TCR}{Intake_{oral} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + EC_{air} \cdot IUR}$$

Noncarcinogens
$$RBC_{soil} = \frac{THI}{\left(\frac{Intake_{oral}}{RID_{oral}} \right) + \left(\frac{Intake_{derm}}{RID_{derm}} \right) + \left(\frac{EC_{air}}{RIC} \right)}$$

$$Intake_{oral} = \frac{IR \times EF \times ED \times FI \times CF}{BW \times AT} \times ADAF$$

$$Intake_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT} \times ADAF$$

$$EC_{air} = \frac{ET \times EF \times ED \times [1/PEF + 1/VF]}{AT \times 24 \text{ hours/day}} \times ADAF$$

Mutagenic
$$RBC_{soil} = \frac{TCR}{Intake_{ages0-2} + Intake_{ages2-5} + Intake_{ages5-16} + Intake_{ages16-30}}$$

INPUT ASSUMPTIONS:				
General	Parameter	Adult	Adult	Definition
		Ages 6 - 16	Ages 16 - 30	
	TCR = :	1E-06		Target Cancer Risk
	THI = :	1		Target Hazard Index
	EF = :	350	350	Exposure Frequency (days/year)
	ED = :	10	14	Exposure Duration (years)
	BW = :	70	70	Body Weight (kg)
	ATc = :	25,550		Averaging time for carcinogenic exposures (days)
	ATn = :	3,650	5,110	Averaging time for noncarcinogenic exposures (days)
	CF = :	1.0E-06		Conversion Factor (kg/mg)
	ADAF = :	Chemical Specific		Age Dependent Adjustment Factor
Incidental Ingestion	IR = :	100	100	Soil Ingestion Rate (mg/day)
	FI = :	1	1	Fraction from contaminated source (unitless)
Dermal Contact	SA = :	5,700	5,700	Skin surface available for contact (cm ² /day)
	AFc = :	0.07	0.07	Soil to skin adherence factor (mg/cm ²)
	ABS = :	Chemical Specific		Absorption factor (unitless)
Inhalation	ETc = :	24	24	Exposure time (hours/day)
	PEF = :	1.10E+10		Particulate emission factor (m ³ /kg)
	VF = :	Chemical Specific		Volatilization factor (m ³ /kg)

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose			ADAF	
		Oral (mg/kg/day) ⁻¹	Dermal (mg/kg/day) ⁻¹	Inhalation (ug/m ³) ⁻¹	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m ³)	Ages 6 - 16	Ages >16
Benzo(a)anthracene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA	3	1
Benzo(a)pyrene	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA	3	1
Benzo(b)fluoranthene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA	3	1
Benzo(k)fluoranthene	0.13	7.3E-02	7.3E-02	1.1E-04	NA	NA	NA	3	1
Dibenzo(a,h)anthracene	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA	3	1
Indeno(1,2,3-cd)pyrene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA	3	1
Benzo(a)pyrene Equivalents	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA	3	1
Arsenic	0.03	1.5E+00	1.5E+00	4.3E-03	3.0E-04	3.0E-04	1.5E-05	1	1

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intake Factors		
	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)
Benzo(a)anthracene	8.61E-07	4.47E-07	5.48E-11	1.37E-06	7.11E-07	8.72E-11
Benzo(a)pyrene	8.61E-07	4.47E-07	5.48E-11	1.37E-06	7.11E-07	8.72E-11
Benzo(b)fluoranthene	8.61E-07	4.47E-07	5.48E-11	1.37E-06	7.11E-07	8.72E-11
Benzo(k)fluoranthene	8.61E-07	4.47E-07	5.48E-11	1.37E-06	7.11E-07	8.72E-11
Dibenzo(a,h)anthracene	8.61E-07	4.47E-07	5.48E-11	1.37E-06	7.11E-07	8.72E-11
Indeno(1,2,3-cd)pyrene	8.61E-07	4.47E-07	5.48E-11	1.37E-06	7.11E-07	8.72E-11
Benzo(a)pyrene Equivalents	8.61E-07	4.47E-07	5.48E-11	1.37E-06	7.11E-07	8.72E-11
Arsenic	4.70E-07	5.62E-08	2.99E-11	1.37E-06	1.64E-07	8.72E-11

CHEMICAL	Soil Concentration	
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg)
Benzo(a)anthracene	1.0	NA
Benzo(a)pyrene	0.10	NA
Benzo(b)fluoranthene	1.0	NA
Benzo(k)fluoranthene	10	NA
Dibenzo(a,h)anthracene	0.10	NA
Indeno(1,2,3-cd)pyrene	1.0	NA
Benzo(a)pyrene Equivalents	0.1	NA
Arsenic	1.3	196

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE 1 OF 2)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 EXPOSURE POINT: TANK FARM 4
 EXPOSURE SCENARIO: LIFELONG RESIDENTS
 MEDIA: SURFACE/SUBSURFACE SOIL
 DATE: NOVEMBER 12, 2012

THIS SPREADSHEET CALCULATES SCREENING LEVELS FOR EXPOSURES TO SOIL VIA INCIDENTAL INGESTION, DERMAL CONTACT, AND INHALATION

RELEVANT EQUATIONS:

Carcinogens

$$RBC_{soil} = \frac{TCR}{Intake_{oral} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + EC_{air} \cdot IUR}$$

Noncarcinogens

$$RBC_{soil} = \frac{THI}{\left(\frac{Intake_{oral}}{RID_{oral}} \right) + \left(\frac{Intake_{derm}}{RID_{derm}} \right) + \left(\frac{EC_{air}}{RIC} \right)}$$

$$Intake_{oral} = \frac{IR \times EF \times ED \times FI \times CF}{BW \times AT} \times ADAF$$

$$Intake_{derm} = \frac{SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT} \times ADAF$$

$$EC_{air} = \frac{ET \times EF \times ED \times [1/PEF + 1/VF]}{AT \times 24 \text{ hours/day}} \times ADAF$$

Mutagenic

$$RBC_{soil} = \frac{TCR}{Intake_{ages0-2} + Intake_{ages2-6} + Intake_{ages6-16} + Intake_{ages16-30}}$$

INPUT ASSUMPTIONS:						Definition
General	Parameter	Child	Child	Adult	Adult	
		Ages 0 - 2	Ages 2 - 6	Ages 6 - 16	Ages 16 - 30	
	TCR = :	1E-06				Target Cancer Risk
	THI = :	1				Target Hazard Index
	EF = :	350	350	350	350	Exposure Frequency (days/year)
	ED = :	2	4	10	14	Exposure Duration (years)
	BW = :	15	15	70	70	Body Weight (kg)
	ATc = :	25,550				Averaging time for carcinogenic exposures (days)
	ATn = :	730	1,460	3,650	5,110	Averaging time for noncarcinogenic exposures (days)
	CF = :	1.0E-06				Conversion Factor (kg/mg)
	ADAF = :	Chemical Specific				Age Dependent Adjustment Factor
Incidental Ingestion	IR = :	200	200	100	100	Soil Ingestion Rate (mg/day)
	FI = :	1	1	1	1	Fraction from contaminated source (unitless)
Dermal Contact	SA = :	2,800	2,800	5,700	5,700	Skin surface available for contact (cm ² /day)
	AFc = :	0.2	0.2	0.07	0.07	Soil to skin adherence factor (mg/cm ²)
	ABS = :	Chemical Specific				Absorption factor (unitless)
Inhalation	ETc = :	24	24	24	24	Exposure time (hours/day)
	PEF = :	1.10E+10				Particulate emission factor (m ³ /kg)
	VF = :	Chemical Specific				Volatilization factor (m ³ /kg)

CHEMICAL	ABS	Cancer Slope Factor			Reference Dose		
		Oral (mg/kg/day) ¹	Dermal (mg/kg/day) ¹	Inhalation (ug/m ³) ¹	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m ³)
Benzo(a)anthracene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA
Benzo(a)pyrene	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA
Benzo(b)fluoranthene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA
Benzo(k)fluoranthene	0.13	7.3E-02	7.3E-02	1.1E-04	NA	NA	NA
Dibenzo(a,h)anthracene	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.13	7.3E-01	7.3E-01	1.1E-04	NA	NA	NA
Benzo(a)pyrene Equivalents	0.13	7.3E+00	7.3E+00	1.1E-03	NA	NA	NA
Arsenic	0.03	1.5E+00	1.5E+00	4.3E-03	3.0E-04	3.0E-04	1.5E-05

CHEMICAL	Age Dependent Adjustment Factor			
	Ages 0 - 2	Ages 2 - 6	Ages 6 - 16	Ages >16
Benzo(a)anthracene	10	3	3	1
Benzo(a)pyrene	10	3	3	1
Benzo(b)fluoranthene	10	3	3	1
Benzo(k)fluoranthene	10	3	3	1
Dibenzo(a,h)anthracene	10	3	3	1
Indeno(1,2,3-cd)pyrene	10	3	3	1
Benzo(a)pyrene Equivalents	10	3	3	1
Arsenic	1	1	1	1

CHEMICAL	Carcinogenic Intake Factors			Noncarcinogenic Intake Factors		
	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)	Oral (kg/kg/day)	Dermal (kg/kg/day)	Inhalation (kg/m ³)
Benzo(a)anthracene	6.71E-06	2.57E-06	9.46E-11	1.28E-05	4.65E-06	8.72E-11
Benzo(a)pyrene	6.71E-06	2.57E-06	9.46E-11	1.28E-05	4.65E-06	8.72E-11
Benzo(b)fluoranthene	6.71E-06	2.57E-06	9.46E-11	1.28E-05	4.65E-06	8.72E-11
Benzo(k)fluoranthene	6.71E-06	2.57E-06	9.46E-11	1.28E-05	4.65E-06	8.72E-11
Dibenzo(a,h)anthracene	6.71E-06	2.57E-06	9.46E-11	1.28E-05	4.65E-06	8.72E-11
Indeno(1,2,3-cd)pyrene	6.71E-06	2.57E-06	9.46E-11	1.28E-05	4.65E-06	8.72E-11
Benzo(a)pyrene Equivalents	6.71E-06	2.57E-06	9.46E-11	1.28E-05	4.65E-06	8.72E-11
Arsenic	1.57E-06	1.48E-07	3.74E-11	1.28E-05	1.07E-06	8.72E-11

RISK ASSESSMENT SPREADSHEET - CALCULATION OF RISK-BASED CONCENTRATIONS FOR SOIL (PAGE 2 OF 2)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 EXPOSURE POINT: TANK FARM 4
 EXPOSURE SCENARIO: LIFELONG RESIDENTS
 MEDIA: SURFACE/SUBSURFACE SOIL
 DATE: NOVEMBER 12, 2012

CHEMICAL	Soil Concentration	
	Carcinogenic (mg/kg)	Noncarcinogenic (mg/kg) ⁽¹⁾
Benzo(a)anthracene	0.15	NA
Benzo(a)pyrene	0.015	NA
Benzo(b)fluoranthene	0.15	NA
Benzo(k)fluoranthene	1.5	NA
Dibenzo(a,h)anthracene	0.015	NA
Indeno(1,2,3-cd)pyrene	0.15	NA
Benzo(a)pyrene Equivalents	0.015	NA
Arsenic	0.39	22

1 - Noncarcinogenic concentration is based on the child resident.

ATTACHMENT B

PROUCL OUTPUTS

BACKGROUND STATISTICS

General Background Statistics			
User Selected Options			
From File	MmA.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Coverage	90%		
Different or Future K Values	1		
Number of Bootstrap Operations	2000		
Arsenic Surface - MnA			
General Statistics			
Total Number of Observations	20	Number of Distinct Observations	16
Tolerance Factor	1.926		
Raw Statistics		Log-Transformed Statistics	
Minimum	2.4	Minimum	0.875
Maximum	6	Maximum	1.792
Second Largest	6	Second Largest	1.792
First Quartile	3	First Quartile	1.099
Median	3.85	Median	1.348
Third Quartile	4.525	Third Quartile	1.51
Mean	4.025	Mean	1.354
SD	1.14	SD	0.285
Coefficient of Variation	0.283		
Skewness	0.405		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.935	Shapiro Wilk Test Statistic	0.953
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	6.221	95% UTL with 90% Coverage	6.707
95% UPL (t)	6.045	95% UPL (t)	6.419
90% Percentile (z)	5.486	90% Percentile (z)	5.582
95% Percentile (z)	5.9	95% Percentile (z)	6.191
99% Percentile (z)	6.677	99% Percentile (z)	7.518
Gamma Distribution Test		Data Distribution Test	
k star	11.27	Data appear Normal at 5% Significance Level	
Theta Star	0.357		
MLE of Mean	4.025		
MLE of Standard Deviation	1.199		
nu star	451		
A-D Test Statistic	0.33	Nonparametric Statistics	
5% A-D Critical Value	0.741	90% Percentile	5.82
K-S Test Statistic	0.123	95% Percentile	6
5% K-S Critical Value	0.194	99% Percentile	6
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution			
95% UTL with 90% Coverage	6		
90% Percentile	5.617	95% Percentile Bootstrap UTL with 90% Coverage	
95% Percentile	6.178	95% BCA Bootstrap UTL with 90% Coverage	
99% Percentile	7.324	95% UPL	
		95% Chebyshev UPL	
95% WH Approx. Gamma UPL	6.255	Upper Threshold Limit Based upon IQR	
95% HW Approx. Gamma UPL	6.291		

BACKGROUND STATISTICS

95% WH Approx. Gamma UTL with 90% Coverage	6.493		
95% HW Approx. Gamma UTL with 90% Coverage	6.54		
Arsenic Surface - Ne			
General Statistics			
Total Number of Observations	22	Number of Distinct Observations	19
Tolerance Factor	1.886		
Raw Statistics		Log-Transformed Statistics	
Minimum	1.7	Minimum	0.531
Maximum	17.1	Maximum	2.839
Second Largest	14.5	Second Largest	2.674
First Quartile	2.4	First Quartile	0.875
Median	5.9	Median	1.774
Third Quartile	8.525	Third Quartile	2.143
Mean	6.277	Mean	1.597
SD	4.394	SD	0.719
Coefficient of Variation	0.7		
Skewness	0.963		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.873	Shapiro Wilk Test Statistic	0.91
Shapiro Wilk Critical Value	0.911	Shapiro Wilk Critical Value	0.911
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	14.56	95% UTL with 90% Coverage	19.16
95% UPL (t)	14.01	95% UPL (t)	17.49
90% Percentile (z)	11.91	90% Percentile (z)	12.41
95% Percentile (z)	13.5	95% Percentile (z)	16.11
99% Percentile (z)	16.5	99% Percentile (z)	26.29
Gamma Distribution Test		Data Distribution Test	
k star	1.964	Data do not follow a Discernable Distribution (0.05)	
Theta Star	3.196		
MLE of Mean	6.277		
MLE of Standard Deviation	4.479		
nu star	86.43		
A-D Test Statistic	0.849	Nonparametric Statistics	
5% A-D Critical Value	0.755	90% Percentile	11.61
K-S Test Statistic	0.216	95% Percentile	14.36
5% K-S Critical Value	0.188	99% Percentile	16.55
Data not Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	14.5
90% Percentile	12.26	95% Percentile Bootstrap UTL with 90% Coverage	16.56
95% Percentile	14.97	95% BCA Bootstrap UTL with 90% Coverage	16.47
99% Percentile	21	95% UPL	16.71
95% WH Approx. Gamma UPL	15.47	95% Chebyshev UPL	25.86
95% HW Approx. Gamma UPL	15.84	Upper Threshold Limit Based upon IQR	17.71
95% WH Approx. Gamma UTL with 90% Coverage	16.49		
95% HW Approx. Gamma UTL with 90% Coverage	16.97		

BACKGROUND STATISTICS

Arsenic Surface - Se			
General Statistics			
Total Number of Observations	20	Number of Distinct Observations	18
Tolerance Factor	1.926		
Raw Statistics		Log-Transformed Statistics	
Minimum	2.62	Minimum	0.963
Maximum	71.7	Maximum	4.272
Second Largest	23.5	Second Largest	3.157
First Quartile	7.375	First Quartile	1.995
Median	9.7	Median	2.272
Third Quartile	12.3	Third Quartile	2.51
Mean	13.01	Mean	2.289
SD	14.56	SD	0.676
Coefficient of Variation	1.119		
Skewness	3.79		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.514	Shapiro Wilk Test Statistic	0.915
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	41.04	95% UTL with 90% Coverage	36.26
95% UPL (t)	38.8	95% UPL (t)	32.67
90% Percentile (z)	31.66	90% Percentile (z)	23.46
95% Percentile (z)	36.95	95% Percentile (z)	29.99
99% Percentile (z)	46.87	99% Percentile (z)	47.54
Gamma Distribution Test		Data Distribution Test	
k star	1.696	Data appear Lognormal at 5% Significance Level	
Theta Star	7.667		
MLE of Mean	13.01		
MLE of Standard Deviation	9.986		
nu star	67.86		
A-D Test Statistic	1.299	Nonparametric Statistics	
5% A-D Critical Value	0.753	90% Percentile	17.02
K-S Test Statistic	0.247	95% Percentile	25.91
5% K-S Critical Value	0.196	99% Percentile	62.54
Data not Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	71.7
90% Percentile	26.31	95% Percentile Bootstrap UTL with 90% Coverage	71.7
95% Percentile	32.53	95% BCA Bootstrap UTL with 90% Coverage	71.7
99% Percentile	46.47	95% UPL	69.29
95% WH Approx. Gamma UPL	32.86	95% Chebyshev UPL	78.03
95% HW Approx. Gamma UPL	32.54	Upper Threshold Limit Based upon IQR	19.69
95% WH Approx. Gamma UTL with 90% Coverage	35.62		
95% HW Approx. Gamma UTL with 90% Coverage	35.43		

BACKGROUND STATISTICS

Arsenic Surface - PM			
General Statistics			
Total Number of Observations	20	Number of Distinct Observations	19
Tolerance Factor	1.926		
Raw Statistics		Log-Transformed Statistics	
Minimum	4.7	Minimum	1.548
Maximum	21.3	Maximum	3.059
Second Largest	15	Second Largest	2.708
First Quartile	6.2	First Quartile	1.824
Median	8.6	Median	2.151
Third Quartile	12.15	Third Quartile	2.497
Mean	9.585	Mean	2.181
SD	4.116	SD	0.402
Coefficient of Variation	0.429		
Skewness	1.246		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.897	Shapiro Wilk Test Statistic	0.968
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	17.51	95% UTL with 90% Coverage	19.2
95% UPL (t)	16.88	95% UPL (t)	18.05
90% Percentile (z)	14.86	90% Percentile (z)	14.82
95% Percentile (z)	16.36	95% Percentile (z)	17.15
99% Percentile (z)	19.16	99% Percentile (z)	22.55
Gamma Distribution Test		Data Distribution Test	
k star	5.548	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1.728		
MLE of Mean	9.585		
MLE of Standard Deviation	4.069		
nu star	221.9		
A-D Test Statistic	0.32	Nonparametric Statistics	
5% A-D Critical Value	0.744	90% Percentile	13.47
K-S Test Statistic	0.106	95% Percentile	15.32
5% K-S Critical Value	0.194	99% Percentile	20.1
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	21.3
90% Percentile	15.03	95% Percentile Bootstrap UTL with 90% Coverage	21.3
95% Percentile	17.11	95% BCA Bootstrap UTL with 90% Coverage	21.3
99% Percentile	21.48	95% UPL	20.99
95% WH Approx. Gamma UPL	17.42	95% Chebyshev UPL	27.97
95% HW Approx. Gamma UPL	17.55	Upper Threshold Limit Based upon IQR	21.08
95% WH Approx. Gamma UTL with 90% Coverage	18.33		
95% HW Approx. Gamma UTL with 90% Coverage	18.5		

BACKGROUND STATISTICS

Arsenic Subsurface - MnA			
General Statistics			
Total Number of Observations	20	Number of Distinct Observations	15
Tolerance Factor	1.926	Number of Missing Values	20
Raw Statistics		Log-Transformed Statistics	
Minimum	2.5	Minimum	0.916
Maximum	6.7	Maximum	1.902
Second Largest	5.3	Second Largest	1.668
First Quartile	3.6	First Quartile	1.281
Median	3.95	Median	1.374
Third Quartile	4.413	Third Quartile	1.484
Mean	4.038	Mean	1.373
SD	0.914	SD	0.213
Coefficient of Variation	0.226		
Skewness	1.291		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.902	Shapiro Wilk Test Statistic	0.959
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	5.798	95% UTL with 90% Coverage	5.956
95% UPL (t)	5.657	95% UPL (t)	5.763
90% Percentile (z)	5.209	90% Percentile (z)	5.191
95% Percentile (z)	5.541	95% Percentile (z)	5.609
99% Percentile (z)	6.164	99% Percentile (z)	6.488
Gamma Distribution Test		Data Distribution Test	
k star	19.25	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.21		
MLE of Mean	4.038		
MLE of Standard Deviation	0.92		
nu star	769.9		
A-D Test Statistic	0.51	Nonparametric Statistics	
5% A-D Critical Value	0.741	90% Percentile	5.21
K-S Test Statistic	0.19	95% Percentile	5.37
5% K-S Critical Value	0.193	99% Percentile	6.434
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	6.7
90% Percentile	5.253	95% Percentile Bootstrap UTL with 90% Coverage	6.7
95% Percentile	5.661	95% BCA Bootstrap UTL with 90% Coverage	6.7
99% Percentile	6.481	95% UPL	6.63
		95% Chebyshev UPL	8.12
95% WH Approx. Gamma UPL	5.709	Upper Threshold Limit Based upon IQR	5.631
95% HW Approx. Gamma UPL	5.721		
95% WH Approx. Gamma UTL with 90% Coverage	5.88		
95% HW Approx. Gamma UTL with 90% Coverage	5.896		

BACKGROUND STATISTICS

Arsenic Subsurface - Ne			
General Statistics			
Total Number of Observations	21	Number of Distinct Observations	18
Tolerance Factor	1.905	Number of Missing Values	22
Raw Statistics		Log-Transformed Statistics	
Minimum	1.9	Minimum	0.642
Maximum	17.7	Maximum	2.874
Second Largest	5.8	Second Largest	1.758
First Quartile	2.5	First Quartile	0.916
Median	3.8	Median	1.335
Third Quartile	4.95	Third Quartile	1.599
Mean	4.376	Mean	1.323
SD	3.315	SD	0.512
Coefficient of Variation	0.757		
Skewness	3.483		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.585	Shapiro Wilk Test Statistic	0.88
Shapiro Wilk Critical Value	0.908	Shapiro Wilk Critical Value	0.908
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	10.69	95% UTL with 90% Coverage	9.966
95% UPL (t)	10.23	95% UPL (t)	9.277
90% Percentile (z)	8.624	90% Percentile (z)	7.241
95% Percentile (z)	9.828	95% Percentile (z)	8.722
99% Percentile (z)	12.09	99% Percentile (z)	12.37
Gamma Distribution Test		Data Distribution Test	
k star	2.965	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	1.476		
MLE of Mean	4.376		
MLE of Standard Deviation	2.542		
nu star	124.5		
A-D Test Statistic	1.054	Nonparametric Statistics	
5% A-D Critical Value	0.749	90% Percentile	5.5
K-S Test Statistic	0.187	95% Percentile	5.8
5% K-S Critical Value	0.191	99% Percentile	15.32
Data follow Appx. Gamma Distribution at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	17.7
90% Percentile	7.784	95% Percentile Bootstrap UTL with 90% Coverage	17.7
95% Percentile	9.215	95% BCA Bootstrap UTL with 90% Coverage	5.8
99% Percentile	12.32	95% UPL	16.51
95% WH Approx. Gamma UPL	9.348	95% Chebyshev UPL	19.16
95% HW Approx. Gamma UPL	9.3	Upper Threshold Limit Based upon IQR	8.625
95% WH Approx. Gamma UTL with 90% Coverage	9.917		
95% HW Approx. Gamma UTL with 90% Coverage	9.892		

BACKGROUND STATISTICS

Arsenic Subsurface - Se			
General Statistics			
Total Number of Observations	15	Number of Distinct Observations	15
Tolerance Factor	2.068	Number of Missing Values	20
Raw Statistics		Log-Transformed Statistics	
Minimum	4.4	Minimum	1.482
Maximum	32.2	Maximum	3.472
Second Largest	25	Second Largest	3.219
First Quartile	9.8	First Quartile	2.282
Median	20.5	Median	3.02
Third Quartile	23.45	Third Quartile	3.155
Mean	16.82	Mean	2.644
SD	8.861	SD	0.675
Coefficient of Variation	0.527		
Skewness	-0.089		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.913	Shapiro Wilk Test Statistic	0.862
Shapiro Wilk Critical Value	0.881	Shapiro Wilk Critical Value	0.881
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	35.14	95% UTL with 90% Coverage	56.82
95% UPL (t)	32.93	95% UPL (t)	48.03
90% Percentile (z)	28.17	90% Percentile (z)	33.42
95% Percentile (z)	31.39	95% Percentile (z)	42.7
99% Percentile (z)	37.43	99% Percentile (z)	67.65
Gamma Distribution Test		Data Distribution Test	
k star	2.41	Data appear Normal at 5% Significance Level	
Theta Star	6.977		
MLE of Mean	16.82		
MLE of Standard Deviation	10.83		
nu star	72.31		
A-D Test Statistic	0.782	Nonparametric Statistics	
5% A-D Critical Value	0.745	90% Percentile	24.84
K-S Test Statistic	0.24	95% Percentile	27.16
5% K-S Critical Value	0.223	99% Percentile	31.19
Data not Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	32.2
90% Percentile	31.32	95% Percentile Bootstrap UTL with 90% Coverage	32.2
95% Percentile	37.65	95% BCA Bootstrap UTL with 90% Coverage	32.2
99% Percentile	51.52	95% UPL	32.2
95% WH Approx. Gamma UPL	39.45	95% Chebyshev UPL	56.71
95% HW Approx. Gamma UPL	41	Upper Threshold Limit Based upon IQR	43.93
95% WH Approx. Gamma UTL with 90% Coverage	44.06		
95% HW Approx. Gamma UTL with 90% Coverage	46.28		

BACKGROUND STATISTICS

Arsenic Subsurface - PM			
General Statistics			
Total Number of Observations	24	Number of Distinct Observations	24
Tolerance Factor	1.853	Number of Missing Values	20
Raw Statistics		Log-Transformed Statistics	
Minimum	5.3	Minimum	1.668
Maximum	23.5	Maximum	3.157
Second Largest	21.8	Second Largest	3.082
First Quartile	10.34	First Quartile	2.336
Median	14.33	Median	2.662
Third Quartile	17.7	Third Quartile	2.874
Mean	14.28	Mean	2.595
SD	4.893	SD	0.381
Coefficient of Variation	0.343		
Skewness	0.0485		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.981	Shapiro Wilk Test Statistic	0.957
Shapiro Wilk Critical Value	0.916	Shapiro Wilk Critical Value	0.916
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	23.35	95% UTL with 90% Coverage	27.14
95% UPL (t)	22.84	95% UPL (t)	26.09
90% Percentile (z)	20.55	90% Percentile (z)	21.83
95% Percentile (z)	22.33	95% Percentile (z)	25.07
99% Percentile (z)	25.66	99% Percentile (z)	32.51
Gamma Distribution Test		Data Distribution Test	
k star	7.004	Data appear Normal at 5% Significance Level	
Theta Star	2.039		
MLE of Mean	14.28		
MLE of Standard Deviation	5.396		
nu star	336.2		
A-D Test Statistic	0.238	Nonparametric Statistics	
5% A-D Critical Value	0.745	90% Percentile	20.47
K-S Test Statistic	0.108	95% Percentile	21.61
5% K-S Critical Value	0.178	99% Percentile	23.11
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	21.8
90% Percentile	21.49	95% Percentile Bootstrap UTL with 90% Coverage	22.6
95% Percentile	24.16	95% BCA Bootstrap UTL with 90% Coverage	22.6
99% Percentile	29.72	95% UPL	23.08
95% WH Approx. Gamma UPL	24.51	95% Chebyshev UPL	36.05
95% HW Approx. Gamma UPL	24.83	Upper Threshold Limit Based upon IQR	28.74
95% WH Approx. Gamma UTL with 90% Coverage	25.28		
95% HW Approx. Gamma UTL with 90% Coverage	25.67		

BACKGROUND STATISTICS

Manganese Surface - MnA			
General Statistics			
Total Number of Observations	20	Number of Distinct Observations	19
Tolerance Factor	1.926		
Raw Statistics		Log-Transformed Statistics	
Minimum	80.4	Minimum	4.387
Maximum	194	Maximum	5.268
Second Largest	190	Second Largest	5.247
First Quartile	113	First Quartile	4.727
Median	139.5	Median	4.938
Third Quartile	172.3	Third Quartile	5.149
Mean	140.7	Mean	4.912
SD	36.28	SD	0.277
Coefficient of Variation	0.258		
Skewness	-0.2		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.946	Shapiro Wilk Test Statistic	0.928
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	210.6	95% UTL with 90% Coverage	231.9
95% UPL (t)	205	95% UPL (t)	222.2
90% Percentile (z)	187.2	90% Percentile (z)	193.9
95% Percentile (z)	200.4	95% Percentile (z)	214.5
99% Percentile (z)	225.1	99% Percentile (z)	259.2
Gamma Distribution Test		Data Distribution Test	
k star	12.41	Data appear Normal at 5% Significance Level	
Theta Star	11.34		
MLE of Mean	140.7		
MLE of Standard Deviation	39.94		
nu star	496.5		
A-D Test Statistic	0.43	Nonparametric Statistics	
5% A-D Critical Value	0.741	90% Percentile	182.8
K-S Test Statistic	0.146	95% Percentile	190.2
5% K-S Critical Value	0.194	99% Percentile	193.2
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	194
90% Percentile	193.7	95% Percentile Bootstrap UTL with 90% Coverage	194
95% Percentile	212.2	95% BCA Bootstrap UTL with 90% Coverage	194
99% Percentile	249.9	95% UPL	193.8
95% WH Approx. Gamma UPL	214.7	95% Chebyshev UPL	302.8
95% HW Approx. Gamma UPL	216.4	Upper Threshold Limit Based upon IQR	261.1
95% WH Approx. Gamma UTL with 90% Coverage	222.6		
95% HW Approx. Gamma UTL with 90% Coverage	224.6		

BACKGROUND STATISTICS

Manganese Surface - Ne			
General Statistics			
Total Number of Observations	22	Number of Distinct Observations	21
Tolerance Factor	1.886		
Raw Statistics		Log-Transformed Statistics	
Minimum	85.5	Minimum	4.449
Maximum	290	Maximum	5.67
Second Largest	253	Second Largest	5.533
First Quartile	129.3	First Quartile	4.862
Median	178	Median	5.182
Third Quartile	201.3	Third Quartile	5.304
Mean	171.1	Mean	5.099
SD	50.83	SD	0.305
Coefficient of Variation	0.297		
Skewness	0.431		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.968	Shapiro Wilk Test Statistic	0.975
Shapiro Wilk Critical Value	0.911	Shapiro Wilk Critical Value	0.911
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	266.9	95% UTL with 90% Coverage	291.2
95% UPL (t)	260.5	95% UPL (t)	280.2
90% Percentile (z)	236.2	90% Percentile (z)	242.2
95% Percentile (z)	254.7	95% Percentile (z)	270.5
99% Percentile (z)	289.3	99% Percentile (z)	333
Gamma Distribution Test		Data Distribution Test	
k star	10.16	Data appear Normal at 5% Significance Level	
Theta Star	16.84		
MLE of Mean	171.1		
MLE of Standard Deviation	53.67		
nu star	447		
A-D Test Statistic	0.298	Nonparametric Statistics	
5% A-D Critical Value	0.743	90% Percentile	221.7
K-S Test Statistic	0.13	95% Percentile	251.5
5% K-S Critical Value	0.185	99% Percentile	282.2
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	253
90% Percentile	242.4	95% Percentile Bootstrap UTL with 90% Coverage	286.3
95% Percentile	267.8	95% BCA Bootstrap UTL with 90% Coverage	253
99% Percentile	320	95% UPL	284.5
95% WH Approx. Gamma UPL	271.1	95% Chebyshev UPL	397.6
95% HW Approx. Gamma UPL	273	Upper Threshold Limit Based upon IQR	309.3
95% WH Approx. Gamma UTL with 90% Coverage	280		
95% HW Approx. Gamma UTL with 90% Coverage	282.4		

BACKGROUND STATISTICS

Manganese Surface - Se			
General Statistics			
Total Number of Observations	20	Number of Distinct Observations	20
Tolerance Factor	1.926		
Raw Statistics		Log-Transformed Statistics	
Minimum	50	Minimum	3.912
Maximum	373	Maximum	5.922
Second Largest	296	Second Largest	5.69
First Quartile	72.53	First Quartile	4.284
Median	91.7	Median	4.518
Third Quartile	169	Third Quartile	5.129
Mean	130.4	Mean	4.696
SD	88.44	SD	0.576
Coefficient of Variation	0.678		
Skewness	1.581		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.793	Shapiro Wilk Test Statistic	0.919
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	300.7	95% UTL with 90% Coverage	332.3
95% UPL (t)	287.1	95% UPL (t)	304
90% Percentile (z)	243.7	90% Percentile (z)	229.2
95% Percentile (z)	275.8	95% Percentile (z)	282.6
99% Percentile (z)	336.1	99% Percentile (z)	418.5
Gamma Distribution Test		Data Distribution Test	
k star	2.609	Data appear Lognormal at 5% Significance Level	
Theta Star	49.96		
MLE of Mean	130.4		
MLE of Standard Deviation	80.71		
nu star	104.4		
A-D Test Statistic	1.003	Nonparametric Statistics	
5% A-D Critical Value	0.747	90% Percentile	252.8
K-S Test Statistic	0.238	95% Percentile	299.9
5% K-S Critical Value	0.195	99% Percentile	358.4
Data not Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	373
90% Percentile	238.5	95% Percentile Bootstrap UTL with 90% Coverage	373
95% Percentile	285	95% BCA Bootstrap UTL with 90% Coverage	373
99% Percentile	386.5	95% UPL	369.2
95% WH Approx. Gamma UPL	292.5	95% Chebyshev UPL	525.4
95% HW Approx. Gamma UPL	294.6	Upper Threshold Limit Based upon IQR	313.7
95% WH Approx. Gamma UTL with 90% Coverage	313.3		
95% HW Approx. Gamma UTL with 90% Coverage	316.8		

BACKGROUND STATISTICS

Manganese Surface - PM			
General Statistics			
Total Number of Observations	20	Number of Distinct Observations	18
Tolerance Factor	1.926		
Raw Statistics		Log-Transformed Statistics	
Minimum	101	Minimum	4.615
Maximum	477	Maximum	6.168
Second Largest	454	Second Largest	6.118
First Quartile	197	First Quartile	5.283
Median	280	Median	5.632
Third Quartile	380.3	Third Quartile	5.94
Mean	289.4	Mean	5.584
SD	112.8	SD	0.44
Coefficient of Variation	0.39		
Skewness	0.0495		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.962	Shapiro Wilk Test Statistic	0.942
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	506.7	95% UTL with 90% Coverage	621.5
95% UPL (t)	489.3	95% UPL (t)	580.7
90% Percentile (z)	434	90% Percentile (z)	467.9
95% Percentile (z)	475	95% Percentile (z)	549.1
99% Percentile (z)	551.9	99% Percentile (z)	741.4
Gamma Distribution Test		Data Distribution Test	
k star	5.231	Data appear Normal at 5% Significance Level	
Theta Star	55.33		
MLE of Mean	289.4		
MLE of Standard Deviation	126.5		
nu star	209.2		
A-D Test Statistic	0.317	Nonparametric Statistics	
5% A-D Critical Value	0.744	90% Percentile	435.1
K-S Test Statistic	0.122	95% Percentile	455.2
5% K-S Critical Value	0.194	99% Percentile	472.6
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	477
90% Percentile	458.7	95% Percentile Bootstrap UTL with 90% Coverage	477
95% Percentile	524	95% BCA Bootstrap UTL with 90% Coverage	477
99% Percentile	661.5	95% UPL	475.9
95% WH Approx. Gamma UPL	534.9	95% Chebyshev UPL	793.3
95% HW Approx. Gamma UPL	544.2	Upper Threshold Limit Based upon IQR	655.1
95% WH Approx. Gamma UTL with 90% Coverage	563.3		
95% HW Approx. Gamma UTL with 90% Coverage	575		

BACKGROUND STATISTICS

Manganese Surface - All Soil			
General Statistics			
Total Number of Observations	82	Number of Distinct Observations	72
Tolerance Factor	1.552	Number of Missing Values	65
Raw Statistics		Log-Transformed Statistics	
Minimum	50	Minimum	3.912
Maximum	477	Maximum	6.168
Second Largest	454	Second Largest	6.118
First Quartile	113	First Quartile	4.727
Median	164	Median	5.1
Third Quartile	216.3	Third Quartile	5.376
Mean	182.6	Mean	5.073
SD	98.78	SD	0.521
Coefficient of Variation	0.541		
Skewness	1.182		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.149	Lilliefors Test Statistic	0.0509
Lilliefors Critical Value	0.0978	Lilliefors Critical Value	0.0978
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	335.9	95% UTL with 90% Coverage	358.6
95% UPL (t)	348	95% UPL (t)	382.1
90% Percentile (z)	309.2	90% Percentile (z)	311.4
95% Percentile (z)	345.1	95% Percentile (z)	376.4
99% Percentile (z)	412.4	99% Percentile (z)	536.8
Gamma Distribution Test		Data Distribution Test	
k star	3.759	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	48.58		
MLE of Mean	182.6		
MLE of Standard Deviation	94.19		
nu star	616.4		
A-D Test Statistic	0.58	Nonparametric Statistics	
5% A-D Critical Value	0.756	90% Percentile	318.2
K-S Test Statistic	0.0816	95% Percentile	400.6
5% K-S Critical Value	0.0991	99% Percentile	458.4
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	402
90% Percentile	308.9	95% Percentile Bootstrap UTL with 90% Coverage	399.1
95% Percentile	359.9	95% BCA Bootstrap UTL with 90% Coverage	373
99% Percentile	469.2	95% UPL	416.5
95% WH Approx. Gamma UPL	361.2	95% Chebyshev UPL	615.8
95% HW Approx. Gamma UPL	365	Upper Threshold Limit Based upon IQR	371.1
95% WH Approx. Gamma UTL with 90% Coverage	343.6		
95% HW Approx. Gamma UTL with 90% Coverage	346.3		

BACKGROUND STATISTICS

Arsenic Surface - All Soil			
General Statistics			
Total Number of Observations	82	Number of Distinct Observations	62
Tolerance Factor	1.552	Number of Missing Values	65
Raw Statistics		Log-Transformed Statistics	
Minimum	1.7	Minimum	0.531
Maximum	71.7	Maximum	4.272
Second Largest	23.5	Second Largest	3.157
First Quartile	3.825	First Quartile	1.341
Median	6.25	Median	1.833
Third Quartile	10.43	Third Quartile	2.344
Mean	8.176	Mean	1.849
SD	8.395	SD	0.671
Coefficient of Variation	1.027		
Skewness	5.578		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.226	Lilliefors Test Statistic	0.0648
Lilliefors Critical Value	0.0978	Lilliefors Critical Value	0.0978
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	21.21	95% UTL with 90% Coverage	18.01
95% UPL (t)	22.23	95% UPL (t)	19.55
90% Percentile (z)	18.93	90% Percentile (z)	15.02
95% Percentile (z)	21.98	95% Percentile (z)	19.17
99% Percentile (z)	27.71	99% Percentile (z)	30.29
Gamma Distribution Test		Data Distribution Test	
k star	2.065	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	3.96		
MLE of Mean	8.176		
MLE of Standard Deviation	5.69		
nu star	338.6		
A-D Test Statistic	1.038	Nonparametric Statistics	
5% A-D Critical Value	0.763	90% Percentile	13.18
K-S Test Statistic	0.0802	95% Percentile	16.24
5% K-S Critical Value	0.0999	99% Percentile	32.66
Data follow Appx. Gamma Distribution at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	16.3
90% Percentile	15.78	95% Percentile Bootstrap UTL with 90% Coverage	16.12
95% Percentile	19.2	95% BCA Bootstrap UTL with 90% Coverage	15
99% Percentile	26.76	95% UPL	16.98
95% WH Approx. Gamma UPL	18.9	95% Chebyshev UPL	44.99
95% HW Approx. Gamma UPL	18.9	Upper Threshold Limit Based upon IQR	20.33
95% WH Approx. Gamma UTL with 90% Coverage	17.75		
95% HW Approx. Gamma UTL with 90% Coverage	17.67		

BACKGROUND STATISTICS

Arsenic Subsurface - All Soil			
General Statistics			
Total Number of Observations	80	Number of Distinct Observations	61
Tolerance Factor	1.556	Number of Missing Values	82
Raw Statistics		Log-Transformed Statistics	
Minimum	1.9	Minimum	0.642
Maximum	32.2	Maximum	3.472
Second Largest	25	Second Largest	3.219
First Quartile	3.875	First Quartile	1.354
Median	5.3	Median	1.668
Third Quartile	14.88	Third Quartile	2.699
Mean	9.596	Mean	1.965
SD	7.45	SD	0.779
Coefficient of Variation	0.776		
Skewness	0.98		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.234	Lilliefors Test Statistic	0.161
Lilliefors Critical Value	0.0991	Lilliefors Critical Value	0.0991
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	21.19	95% UTL with 90% Coverage	23.97
95% UPL (t)	22.07	95% UPL (t)	26.29
90% Percentile (z)	19.14	90% Percentile (z)	19.36
95% Percentile (z)	21.85	95% Percentile (z)	25.69
99% Percentile (z)	26.93	99% Percentile (z)	43.68
Gamma Distribution Test		Data Distribution Test	
k star	1.775	Data do not follow a Discernable Distribution (0.05)	
Theta Star	5.406		
MLE of Mean	9.596		
MLE of Standard Deviation	7.202		
nu star	284		
A-D Test Statistic	2.778	Nonparametric Statistics	
5% A-D Critical Value	0.766	90% Percentile	20.99
K-S Test Statistic	0.195	95% Percentile	23.51
5% K-S Critical Value	0.101	99% Percentile	26.51
Data not Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	23.5
90% Percentile	19.2	95% Percentile Bootstrap UTL with 90% Coverage	23.5
95% Percentile	23.65	95% BCA Bootstrap UTL with 90% Coverage	23.5
99% Percentile	33.59	95% UPL	23.6
95% WH Approx. Gamma UPL	23.71	95% Chebyshev UPL	42.27
95% HW Approx. Gamma UPL	24.17	Upper Threshold Limit Based upon IQR	31.38
95% WH Approx. Gamma UTL with 90% Coverage	22.2		
95% HW Approx. Gamma UTL with 90% Coverage	22.51		

BACKGROUND STATISTICS

Manganese Subsurface - MnA			
General Statistics			
Total Number of Observations	20	Number of Distinct Observations	20
Tolerance Factor	1.926	Number of Missing Values	20
Raw Statistics		Log-Transformed Statistics	
Minimum	193	Minimum	5.263
Maximum	669.5	Maximum	6.507
Second Largest	539	Second Largest	6.29
First Quartile	251.8	First Quartile	5.528
Median	289.5	Median	5.668
Third Quartile	322.1	Third Quartile	5.775
Mean	316.2	Mean	5.708
SD	114.5	SD	0.301
Coefficient of Variation	0.362		
Skewness	2.047		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.768	Shapiro Wilk Test Statistic	0.892
Shapiro Wilk Critical Value	0.905	Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	536.7	95% UTL with 90% Coverage	537.6
95% UPL (t)	519.1	95% UPL (t)	513.3
90% Percentile (z)	462.9	90% Percentile (z)	442.9
95% Percentile (z)	504.5	95% Percentile (z)	494
99% Percentile (z)	582.6	99% Percentile (z)	606.3
Gamma Distribution Test		Data Distribution Test	
k star	9.008	Data do not follow a Discernable Distribution (0.05)	
Theta Star	35.1		
MLE of Mean	316.2		
MLE of Standard Deviation	105.4		
nu star	360.3		
A-D Test Statistic	1.118	Nonparametric Statistics	
5% A-D Critical Value	0.742	90% Percentile	458.9
K-S Test Statistic	0.235	95% Percentile	545.5
5% K-S Critical Value	0.194	99% Percentile	644.7
Data not Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	669.5
90% Percentile	456.5	95% Percentile Bootstrap UTL with 90% Coverage	669.5
95% Percentile	507.1	95% BCA Bootstrap UTL with 90% Coverage	669.5
99% Percentile	611.3	95% UPL	663
		95% Chebyshev UPL	827.6
95% WH Approx. Gamma UPL	513.3	Upper Threshold Limit Based upon IQR	427.7
95% HW Approx. Gamma UPL	513.1		
95% WH Approx. Gamma UTL with 90% Coverage	534.8		
95% HW Approx. Gamma UTL with 90% Coverage	535.2		

BACKGROUND STATISTICS

Manganese Subsurface - Ne			
General Statistics			
Total Number of Observations	21	Number of Distinct Observations	21
Tolerance Factor	1.905	Number of Missing Values	22
Raw Statistics		Log-Transformed Statistics	
Minimum	176	Minimum	5.17
Maximum	634	Maximum	6.452
Second Largest	359	Second Largest	5.883
First Quartile	224.5	First Quartile	5.414
Median	255	Median	5.541
Third Quartile	322	Third Quartile	5.775
Mean	283.6	Mean	5.605
SD	96.93	SD	0.283
Coefficient of Variation	0.342		
Skewness	2.45		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.761	Shapiro Wilk Test Statistic	0.912
Shapiro Wilk Critical Value	0.908	Shapiro Wilk Critical Value	0.908
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	468.2	95% UTL with 90% Coverage	466.2
95% UPL (t)	454.7	95% UPL (t)	448.1
90% Percentile (z)	407.8	90% Percentile (z)	390.7
95% Percentile (z)	443	95% Percentile (z)	433.1
99% Percentile (z)	509.1	99% Percentile (z)	525.3
Gamma Distribution Test		Data Distribution Test	
k star	10.25	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	27.66		
MLE of Mean	283.6		
MLE of Standard Deviation	88.57		
nu star	430.6		
A-D Test Statistic	0.665	Nonparametric Statistics	
5% A-D Critical Value	0.743	90% Percentile	344
K-S Test Statistic	0.135	95% Percentile	359
5% K-S Critical Value	0.189	99% Percentile	579
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	634
90% Percentile	401.4	95% Percentile Bootstrap UTL with 90% Coverage	634
95% Percentile	443.2	95% BCA Bootstrap UTL with 90% Coverage	359
99% Percentile	529.1	95% UPL	606.5
95% WH Approx. Gamma UPL	447.9	95% Chebyshev UPL	716
95% HW Approx. Gamma UPL	447.7	Upper Threshold Limit Based upon IQR	468.3
95% WH Approx. Gamma UTL with 90% Coverage	464		
95% HW Approx. Gamma UTL with 90% Coverage	464.3		

BACKGROUND STATISTICS

Manganese Subsurface - Se			
General Statistics			
Total Number of Observations	15	Number of Distinct Observations	15
Tolerance Factor	2.068	Number of Missing Values	20
Raw Statistics		Log-Transformed Statistics	
Minimum	191	Minimum	5.252
Maximum	1330	Maximum	7.193
Second Largest	1040	Second Largest	6.947
First Quartile	260.8	First Quartile	5.563
Median	334	Median	5.811
Third Quartile	492.5	Third Quartile	6.196
Mean	460.5	Mean	5.967
SD	319.8	SD	0.557
Coefficient of Variation	0.694		
Skewness	1.972		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.749	Shapiro Wilk Test Statistic	0.923
Shapiro Wilk Critical Value	0.881	Shapiro Wilk Critical Value	0.881
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	1122	95% UTL with 90% Coverage	1236
95% UPL (t)	1042	95% UPL (t)	1076
90% Percentile (z)	870.4	90% Percentile (z)	797.7
95% Percentile (z)	986.5	95% Percentile (z)	976.7
99% Percentile (z)	1204	99% Percentile (z)	1428
Gamma Distribution Test		Data Distribution Test	
k star	2.597	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	177.3		
MLE of Mean	460.5		
MLE of Standard Deviation	285.8		
nu star	77.9		
A-D Test Statistic	0.714	Nonparametric Statistics	
5% A-D Critical Value	0.744	90% Percentile	849.2
K-S Test Statistic	0.173	95% Percentile	1127
5% K-S Critical Value	0.223	99% Percentile	1289
Data appear Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	1330
90% Percentile	843.4	95% Percentile Bootstrap UTL with 90% Coverage	1330
95% Percentile	1008	95% BCA Bootstrap UTL with 90% Coverage	1214
99% Percentile	1368	95% UPL	1330
95% WH Approx. Gamma UPL	1044	95% Chebyshev UPL	1900
95% HW Approx. Gamma UPL	1049	Upper Threshold Limit Based upon IQR	840.1
95% WH Approx. Gamma UTL with 90% Coverage	1162		
95% HW Approx. Gamma UTL with 90% Coverage	1176		

BACKGROUND STATISTICS

Manganese Subsurface - PM			
General Statistics			
Total Number of Observations	24	Number of Distinct Observations	24
Tolerance Factor	1.853	Number of Missing Values	20
Raw Statistics		Log-Transformed Statistics	
Minimum	214	Minimum	5.366
Maximum	1520	Maximum	7.326
Second Largest	1370	Second Largest	7.223
First Quartile	370.8	First Quartile	5.916
Median	462.3	Median	6.136
Third Quartile	597.5	Third Quartile	6.393
Mean	549.2	Mean	6.192
SD	313.6	SD	0.469
Coefficient of Variation	0.571		
Skewness	2.101		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.762	Shapiro Wilk Test Statistic	0.948
Shapiro Wilk Critical Value	0.916	Shapiro Wilk Critical Value	0.916
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	1130	95% UTL with 90% Coverage	1166
95% UPL (t)	1098	95% UPL (t)	1111
90% Percentile (z)	951.1	90% Percentile (z)	891.8
95% Percentile (z)	1065	95% Percentile (z)	1057
99% Percentile (z)	1279	99% Percentile (z)	1456
Gamma Distribution Test		Data Distribution Test	
k star	3.924	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	140		
MLE of Mean	549.2		
MLE of Standard Deviation	277.3		
nu star	188.3		
A-D Test Statistic	0.77	Nonparametric Statistics	
5% A-D Critical Value	0.748	90% Percentile	791.2
K-S Test Statistic	0.171	95% Percentile	1292
5% K-S Critical Value	0.179	99% Percentile	1486
Data follow Appx. Gamma Distribution at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	1370
90% Percentile	920.9	95% Percentile Bootstrap UTL with 90% Coverage	1370
95% Percentile	1070	95% BCA Bootstrap UTL with 90% Coverage	1370
99% Percentile	1389	95% UPL	1483
95% WH Approx. Gamma UPL	1086	95% Chebyshev UPL	1944
95% HW Approx. Gamma UPL	1090	Upper Threshold Limit Based upon IQR	937.6
95% WH Approx. Gamma UTL with 90% Coverage	1130		
95% HW Approx. Gamma UTL with 90% Coverage	1136		

BACKGROUND STATISTICS

Manganese Subsurface - All Soil			
General Statistics			
Total Number of Observations	80	Number of Distinct Observations	77
Tolerance Factor	1.556	Number of Missing Values	82
Raw Statistics		Log-Transformed Statistics	
Minimum	176	Minimum	5.17
Maximum	1520	Maximum	7.326
Second Largest	1370	Second Largest	7.223
First Quartile	252.8	First Quartile	5.532
Median	320.8	Median	5.771
Third Quartile	452.3	Third Quartile	6.114
Mean	404.6	Mean	5.875
SD	255.2	SD	0.469
Coefficient of Variation	0.631		
Skewness	2.62		
Background Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.201	Lilliefors Test Statistic	0.129
Lilliefors Critical Value	0.0991	Lilliefors Critical Value	0.0991
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% UTL with 90% Coverage	801.6	95% UTL with 90% Coverage	738.2
95% UPL (t)	831.9	95% UPL (t)	780.5
90% Percentile (z)	731.6	90% Percentile (z)	649.1
95% Percentile (z)	824.3	95% Percentile (z)	769.6
99% Percentile (z)	998.2	99% Percentile (z)	1059
Gamma Distribution Test		Data Distribution Test	
k star	3.921	Data do not follow a Discernable Distribution (0.05)	
Theta Star	103.2		
MLE of Mean	404.6		
MLE of Standard Deviation	204.3		
nu star	627.4		
A-D Test Statistic	2.963	Nonparametric Statistics	
5% A-D Critical Value	0.756	90% Percentile	635.8
K-S Test Statistic	0.16	95% Percentile	859.5
5% K-S Critical Value	0.1	99% Percentile	1402
Data not Gamma Distributed at 5% Significance Level			
Assuming Gamma Distribution		95% UTL with 90% Coverage	850
90% Percentile	678.5	95% Percentile Bootstrap UTL with 90% Coverage	850
95% Percentile	788.5	95% BCA Bootstrap UTL with 90% Coverage	850
99% Percentile	1024	95% UPL	1031
95% WH Approx. Gamma UPL	786.7	95% Chebyshev UPL	1524
95% HW Approx. Gamma UPL	783.9	Upper Threshold Limit Based upon IQR	751.5
95% WH Approx. Gamma UTL with 90% Coverage	750.1		
95% HW Approx. Gamma UTL with 90% Coverage	746.1		

BACKGROUND STATISTICS

Benzo(a)anthracene Surface - Se			
General Statistics			
Number of Valid Data	20	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	17
Warning: Data set has only 3 Detected Values.			
This is not enough to compute meaningful and reliable test statistics and estimates.			
No statistics will be produced!			
Tolerance Factor	1.926	Percent Non-Detects	85.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	53	Minimum Detected	3.97
Maximum Detected	79	Maximum Detected	4.369
Mean of Detected	62	Mean of Detected	4.11
SD of Detected	14.73	SD of Detected	0.225
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	270	Maximum Non-Detect	5.598
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	20
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: There are only 3 Distinct Detected Values in this data set			
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.			
Those methods will return a 'N/A' value on your output display!			
It is necessary to have 4 or more Distinct Values for bootstrap methods.			
However, results obtained using 4 to 9 distinct values may not be reliable.			
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.779	Shapiro Wilk Test Statistic	0.785
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	114.4	Mean (Log Scale)	4.707
SD	25.45	SD (Log Scale)	0.285
95% UTL 90% Coverage	163.5	95% UTL 90% Coverage	191.8
95% UPL (t)	159.5	95% UPL (t)	183.6
90% Percentile (z)	147	90% Percentile (z)	159.6
95% Percentile (z)	156.3	95% Percentile (z)	177
99% Percentile (z)	173.6	99% Percentile (z)	215
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	61.75
		SD in Original Scale	10.53
		Mean in Log Scale	4.11
		SD in Log Scale	0.169
		95% UTL 90% Coverage	84.29
		95% UPL (t)	82.13
		90% Percentile (z)	75.61
		95% Percentile (z)	80.39
		99% Percentile (z)	90.17

BACKGROUND STATISTICS

Benzo(a)anthracene Surface - Se (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	62
5% K-S Critical Value	N/A	SD	12.03
Data not Gamma Distributed at 5% Significance Level		SE of Mean	8.505
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	85.17
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	115.7
Mean	N/A	95% KM UPL (t)	83.31
Median	N/A	90% Percentile (z)	77.41
SD	N/A	95% Percentile (z)	81.78
k star	N/A	99% Percentile (z)	89.98
Theta star	N/A	Gamma ROS Limits with Extrapolated Data	
Nu star	N/A	95% Wilson Hilferty (WH) Approx. Gamma UPL	N/A
95% Percentile of Chisquare (2k)	N/A	95% Hawkins Wixley (HW) Approx. Gamma UPL	N/A
		95% WH Approx. Gamma UTL with 90% Coverage	N/A
90% Percentile	N/A	95% HW Approx. Gamma UTL with 90% Coverage	N/A
95% Percentile	N/A		
99% Percentile	N/A		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(a)anthracene Surface - PM			
General Statistics			
Number of Valid Data	20	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	17
Warning: Data set has only 3 Detected Values.			
This is not enough to compute meaningful and reliable test statistics and estimates.			
No statistics will be produced!			
Tolerance Factor	1.926	Percent Non-Detects	85.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	52	Minimum Detected	3.951
Maximum Detected	66	Maximum Detected	4.19
Mean of Detected	59	Mean of Detected	4.073
SD of Detected	7	SD of Detected	0.119
Minimum Non-Detect	230	Minimum Non-Detect	5.438
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	20
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: There are only 3 Distinct Detected Values in this data set			
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.			
Those methods will return a 'N/A' value on your output display!			
It is necessary to have 4 or more Distinct Values for bootstrap methods.			
However, results obtained using 4 to 9 distinct values may not be reliable.			
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	1	Shapiro Wilk Test Statistic	0.999
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	113.5	Mean (Log Scale)	4.7
SD	25.12	SD (Log Scale)	0.281
95% UTL 90% Coverage	161.9	95% UTL 90% Coverage	188.7
95% UPL (t)	158	95% UPL (t)	180.7
90% Percentile (z)	145.7	90% Percentile (z)	157.5
95% Percentile (z)	154.8	95% Percentile (z)	174.4
99% Percentile (z)	171.9	99% Percentile (z)	211.1
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	59.04
		SD in Original Scale	6.269
		Mean in Log Scale	4.073
		SD in Log Scale	0.106
		95% UTL 90% Coverage	72.05
		95% UPL (t)	70.88
		90% Percentile (z)	67.28
		95% Percentile (z)	69.93
		99% Percentile (z)	75.18

BACKGROUND STATISTICS

Benzo(a)anthracene Surface - PM (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	59
5% K-S Critical Value	N/A	SD	5.715
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.041
		95% KM UTL with 90% Coverage	70.01
Assuming Gamma Distribution		95% KM Chebyshev UPL	84.53
Gamma ROS Statistics with Extrapolated Data		95% KM UPL (t)	69.13
Mean	N/A	90% Percentile (z)	66.32
Median	N/A	95% Percentile (z)	68.4
SD	N/A	99% Percentile (z)	72.3
k star	N/A		
Theta star	N/A	Gamma ROS Limits with Extrapolated Data	
Nu star	N/A	95% Wilson Hilferty (WH) Approx. Gamma UPL	N/A
95% Percentile of Chisquare (2k)	N/A	95% Hawkins Wixley (HW) Approx. Gamma UPL	N/A
		95% WH Approx. Gamma UTL with 90% Coverage	N/A
90% Percentile	N/A	95% HW Approx. Gamma UTL with 90% Coverage	N/A
95% Percentile	N/A		
99% Percentile	N/A		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(a)anthracene Surface - All Soil			
General Statistics			
Number of Valid Data	40	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	34
Tolerance Factor	1.69	Percent Non-Detects	85.00%
Number of Missing Values	107		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	52	Minimum Detected	3.951
Maximum Detected	79	Maximum Detected	4.369
Mean of Detected	60.5	Mean of Detected	4.091
SD of Detected	10.45	SD of Detected	0.162
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	40
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: There are only 6 Detected Values in this data			
Note: It should be noted that even though bootstrap may be performed on this data set			
the resulting calculations may not be reliable enough to draw conclusions			
It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.843	Shapiro Wilk Test Statistic	0.867
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	114	Mean (Log Scale)	4.704
SD	24.97	SD (Log Scale)	0.279
95% UTL 90% Coverage	156.1	95% UTL 90% Coverage	176.9
95% UPL (t)	156.5	95% UPL (t)	177.7
90% Percentile (z)	145.9	90% Percentile (z)	157.8
95% Percentile (z)	155	95% Percentile (z)	174.7
99% Percentile (z)	172	99% Percentile (z)	211.3
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	60.36
		SD in Original Scale	8.373
		Mean in Log Scale	4.091
		SD in Log Scale	0.137
		95% UTL 90% Coverage	75.39
		95% UPL (t)	75.56
		90% Percentile (z)	71.29
		95% Percentile (z)	74.93
		99% Percentile (z)	82.26

BACKGROUND STATISTICS

Benzo(a)anthracene Surface - All Soil (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	22.03	Data appear Normal at 5% Significance Level	
Theta Star	2.747		
nu star	264.3		
A-D Test Statistic	0.474	Nonparametric Statistics	
5% A-D Critical Value	0.697	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.254	Mean	60.5
5% K-S Critical Value	0.332	SD	9.535
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	4.264
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	76.61
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	102.6
Mean	60.62	95% KM UPL (t)	76.76
Median	62.16	90% Percentile (z)	72.72
SD	8	95% Percentile (z)	76.18
k star	51.99	99% Percentile (z)	82.68
Theta star	1.166	Gamma ROS Limits with Extrapolated Data	
Nu star	4159	95% Wilson Hilferty (WH) Approx. Gamma UPL	75.28
95% Percentile of Chisquare (2k)	128.8	95% Hawkins Wixley (HW) Approx. Gamma UPL	75.43
		95% WH Approx. Gamma UTL with 90% Coverage	75.13
90% Percentile	71.62	95% HW Approx. Gamma UTL with 90% Coverage	75.28
95% Percentile	75.08		
99% Percentile	81.88		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(a)pyrene Surface - Se			
General Statistics			
Number of Valid Data	20	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	18
Warning: Data set has only 2 Detected Values.			
This is not enough to compute meaningful and reliable test statistics and estimates.			
No statistics will be produced!			
Tolerance Factor	1.926	Percent Non-Detects	90.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	62	Minimum Detected	4.127
Maximum Detected	95	Maximum Detected	4.554
Mean of Detected	78.5	Mean of Detected	4.341
SD of Detected	23.33	SD of Detected	0.302
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	270	Maximum Non-Detect	5.598
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	20
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: Data set has only 2 Distinct Detected Values.			
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.			
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).			
Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.			
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.			
Those methods will return a 'N/A' value on your output display!			
It is necessary to have 4 or more Distinct Values for bootstrap methods.			
However, results obtained using 4 to 9 distinct values may not be reliable.			
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	119.5	Mean (Log Scale)	4.768
SD	18.48	SD (Log Scale)	0.19
95% UTL 90% Coverage	155.1	95% UTL 90% Coverage	169.6
95% UPL (t)	152.2	95% UPL (t)	164.7
90% Percentile (z)	143.2	90% Percentile (z)	150.1
95% Percentile (z)	149.9	95% Percentile (z)	160.8
99% Percentile (z)	162.5	99% Percentile (z)	183
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		95% UTL 90% Coverage	N/A
		95% UPL (t)	N/A
		90% Percentile (z)	N/A

BACKGROUND STATISTICS

		95% Percentile (z)	N/A
		99% Percentile (z)	N/A
Benzo(a)pyrene Surface - Se (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	78.5
5% K-S Critical Value	N/A	SD	16.5
Data not Gamma Distributed at 5% Significance Level		SE of Mean	16.5
		95% KM UTL with 90% Coverage	110.3
Assuming Gamma Distribution		95% KM Chebyshev UPL	152.2
Gamma ROS Statistics with Extrapolated Data		95% KM UPL (t)	107.7
Mean	N/A	90% Percentile (z)	99.65
Median	N/A	95% Percentile (z)	105.6
SD	N/A	99% Percentile (z)	116.9
k star	N/A		
Theta star	N/A	Gamma ROS Limits with Extrapolated Data	
Nu star	N/A	95% Wilson Hilferty (WH) Approx. Gamma UPL	N/A
95% Percentile of Chisquare (2k)	N/A	95% Hawkins Wixley (HW) Approx. Gamma UPL	N/A
		95% WH Approx. Gamma UTL with 90% Coverage	N/A
90% Percentile	N/A	95% HW Approx. Gamma UTL with 90% Coverage	N/A
95% Percentile	N/A		
99% Percentile	N/A		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(a)pyrene Surface - PM			
General Statistics			
Number of Valid Data	20	Number of Detected Data	9
Number of Distinct Detected Data	8	Number of Non-Detect Data	11
Tolerance Factor	1.926	Percent Non-Detects	55.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	51	Minimum Detected	3.932
Maximum Detected	85	Maximum Detected	4.443
Mean of Detected	63.56	Mean of Detected	4.138
SD of Detected	11.67	SD of Detected	0.177
Minimum Non-Detect	230	Minimum Non-Detect	5.438
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	20
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: There are only 9 Detected Values in this data			
Note: It should be noted that even though bootstrap may be performed on this data set			
the resulting calculations may not be reliable enough to draw conclusions			
It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.911	Shapiro Wilk Test Statistic	0.934
5% Shapiro Wilk Critical Value	0.829	5% Shapiro Wilk Critical Value	0.829
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	96.73	Mean (Log Scale)	4.511
SD	32.78	SD (Log Scale)	0.37
95% UTL 90% Coverage	159.9	95% UTL 90% Coverage	185.5
95% UPL (t)	154.8	95% UPL (t)	175.2
90% Percentile (z)	138.7	90% Percentile (z)	146.1
95% Percentile (z)	150.6	95% Percentile (z)	167.2
99% Percentile (z)	173	99% Percentile (z)	215.1
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	63.21
		SD in Original Scale	8.81
		Mean in Log Scale	4.138
		SD in Log Scale	0.135
		95% UTL 90% Coverage	81.26
		95% UPL (t)	79.59
		90% Percentile (z)	74.49
		95% Percentile (z)	78.24
		99% Percentile (z)	85.78

BACKGROUND STATISTICS

Benzo(a)pyrene Surface - PM (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	23.62	Data appear Normal at 5% Significance Level	
Theta Star	2.69		
nu star	425.2		
A-D Test Statistic	0.321	Nonparametric Statistics	
5% A-D Critical Value	0.721	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.167	Mean	63.56
5% K-S Critical Value	0.279	SD	11.01
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	3.891
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	84.75
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	112.7
Mean	64.32	95% KM UPL (t)	83.06
Median	65.7	90% Percentile (z)	77.66
SD	8.714	95% Percentile (z)	81.66
k star	49.86	99% Percentile (z)	89.16
Theta star	1.29	Gamma ROS Limits with Extrapolated Data	
Nu star	1994	95% Wilson Hilferty (WH) Approx. Gamma UPL	80.41
95% Percentile of Chisquare (2k)	124	95% Hawkins Wixley (HW) Approx. Gamma UPL	80.51
		95% WH Approx. Gamma UTL with 90% Coverage	81.96
90% Percentile	76.24	95% HW Approx. Gamma UTL with 90% Coverage	82.09
95% Percentile	80.01		
99% Percentile	87.39		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(a)pyrene Surface - All Soil			
General Statistics			
Number of Valid Data	40	Number of Detected Data	11
Number of Distinct Detected Data	10	Number of Non-Detect Data	29
Tolerance Factor	1.69	Percent Non-Detects	72.50%
Number of Missing Values	107		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	51	Minimum Detected	3.932
Maximum Detected	95	Maximum Detected	4.554
Mean of Detected	66.27	Mean of Detected	4.175
SD of Detected	14.14	SD of Detected	0.202
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	40
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.897	Shapiro Wilk Test Statistic	0.93
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	108.1	Mean (Log Scale)	4.639
SD	28.68	SD (Log Scale)	0.318
95% UTL 90% Coverage	156.6	95% UTL 90% Coverage	177.1
95% UPL (t)	157	95% UPL (t)	178
90% Percentile (z)	144.9	90% Percentile (z)	155.6
95% Percentile (z)	155.3	95% Percentile (z)	174.6
99% Percentile (z)	174.8	99% Percentile (z)	216.9
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	65.88
		SD in Original Scale	11.05
		Mean in Log Scale	4.175
		SD in Log Scale	0.164
		95% UTL 90% Coverage	85.72
		95% UPL (t)	85.95
		90% Percentile (z)	80.18
		95% Percentile (z)	85.1
		99% Percentile (z)	95.14

BACKGROUND STATISTICS

Benzo(a)pyrene Surface - All Soil (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	19.11	Data appear Normal at 5% Significance Level	
Theta Star	3.468		
nu star	420.4		
A-D Test Statistic	0.406	Nonparametric Statistics	
5% A-D Critical Value	0.729	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.181	Mean	66.27
5% K-S Critical Value	0.255	SD	13.48
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	4.264
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	89.06
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	125.8
Mean	66.97	95% KM UPL (t)	89.27
Median	68.48	90% Percentile (z)	83.55
SD	10.65	95% Percentile (z)	88.45
k star	36.86	99% Percentile (z)	97.64
Theta star	1.817	Gamma ROS Limits with Extrapolated Data	
Nu star	2949	95% Wilson Hilferty (WH) Approx. Gamma UPL	86.36
95% Percentile of Chisquare (2k)	94.77	95% Hawkins Wixley (HW) Approx. Gamma UPL	86.55
		95% WH Approx. Gamma UTL with 90% Coverage	86.16
90% Percentile	81.44	95% HW Approx. Gamma UTL with 90% Coverage	86.34
95% Percentile	86.08		
99% Percentile	95.26		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(b)fluoranthene Surface - Se			
General Statistics			
Number of Valid Data	20	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	17
Warning: Data set has only 3 Detected Values.			
This is not enough to compute meaningful and reliable test statistics and estimates.			
No statistics will be produced!			
Tolerance Factor	1.926	Percent Non-Detects	85.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	64	Minimum Detected	4.159
Maximum Detected	130	Maximum Detected	4.868
Mean of Detected	101.3	Mean of Detected	4.576
SD of Detected	33.84	SD of Detected	0.37
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	270	Maximum Non-Detect	5.598
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	20
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: There are only 3 Distinct Detected Values in this data set			
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.			
Those methods will return a 'N/A' value on your output display!			
It is necessary to have 4 or more Distinct Values for bootstrap methods.			
However, results obtained using 4 to 9 distinct values may not be reliable.			
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.951	Shapiro Wilk Test Statistic	0.915
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	120.1	Mean (Log Scale)	4.775
SD	17.19	SD (Log Scale)	0.177
95% UTL 90% Coverage	153.2	95% UTL 90% Coverage	166.6
95% UPL (t)	150.5	95% UPL (t)	162.1
90% Percentile (z)	142.1	90% Percentile (z)	148.7
95% Percentile (z)	148.4	95% Percentile (z)	158.5
99% Percentile (z)	160.1	99% Percentile (z)	178.8
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	101.4
		SD in Original Scale	30.79
		Mean in Log Scale	4.576
		SD in Log Scale	0.305
		95% UTL 90% Coverage	174.7
		95% UPL (t)	166.7
		90% Percentile (z)	143.5
		95% Percentile (z)	160.4
		99% Percentile (z)	197.4

BACKGROUND STATISTICS

Benzo(b)fluoranthene Surface - Se (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	101.3
5% K-S Critical Value	N/A	SD	27.63
Data not Gamma Distributed at 5% Significance Level		SE of Mean	19.54
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	154.6
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	224.8
Mean	N/A	95% KM UPL (t)	150.3
Median	N/A	90% Percentile (z)	136.7
SD	N/A	95% Percentile (z)	146.8
k star	N/A	99% Percentile (z)	165.6
Theta star	N/A	Gamma ROS Limits with Extrapolated Data	
Nu star	N/A	95% Wilson Hilferty (WH) Approx. Gamma UPL	N/A
95% Percentile of Chisquare (2k)	N/A	95% Hawkins Wixley (HW) Approx. Gamma UPL	N/A
		95% WH Approx. Gamma UTL with 90% Coverage	N/A
90% Percentile	N/A	95% HW Approx. Gamma UTL with 90% Coverage	N/A
95% Percentile	N/A		
99% Percentile	N/A		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(b)fluoranthene Surface - PM			
General Statistics			
Number of Valid Data	20	Number of Detected Data	10
Number of Distinct Detected Data	10	Number of Non-Detect Data	10
Tolerance Factor	1.926	Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	51	Minimum Detected	3.932
Maximum Detected	120	Maximum Detected	4.787
Mean of Detected	74.55	Mean of Detected	4.283
SD of Detected	19.63	SD of Detected	0.246
Minimum Non-Detect	230	Minimum Non-Detect	5.438
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	20
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.892	Shapiro Wilk Test Statistic	0.951
5% Shapiro Wilk Critical Value	0.842	5% Shapiro Wilk Critical Value	0.842
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	99.15	Mean (Log Scale)	4.549
SD	29.81	SD (Log Scale)	0.327
95% UTL 90% Coverage	156.6	95% UTL 90% Coverage	177.4
95% UPL (t)	152	95% UPL (t)	168.7
90% Percentile (z)	137.4	90% Percentile (z)	143.7
95% Percentile (z)	148.2	95% Percentile (z)	161.8
99% Percentile (z)	168.5	99% Percentile (z)	202.2
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	73.75
		SD in Original Scale	14.87
		Mean in Log Scale	4.283
		SD in Log Scale	0.189
		95% UTL 90% Coverage	104.4
		95% UPL (t)	101.4
		90% Percentile (z)	92.38
		95% Percentile (z)	98.96
		99% Percentile (z)	112.6

BACKGROUND STATISTICS

Benzo(b)fluoranthene Surface - PM (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	12.53	Data appear Normal at 5% Significance Level	
Theta Star	5.948		
nu star	250.7		
A-D Test Statistic	0.313	Nonparametric Statistics	
5% A-D Critical Value	0.725	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.172	Mean	74.55
5% K-S Critical Value	0.266	SD	18.62
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	6.208
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	110.4
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	157.7
Mean	75.78	95% KM UPL (t)	107.5
Median	76.98	90% Percentile (z)	98.42
SD	14.82	95% Percentile (z)	105.2
k star	24.8	99% Percentile (z)	117.9
Theta star	3.055	Gamma ROS Limits with Extrapolated Data	
Nu star	992.1	95% Wilson Hilferty (WH) Approx. Gamma UPL	103.2
95% Percentile of Chisquare (2k)	67.04	95% Hawkins Wixley (HW) Approx. Gamma UPL	103.4
		95% WH Approx. Gamma UTL with 90% Coverage	105.9
90% Percentile	95.81	95% HW Approx. Gamma UTL with 90% Coverage	106.2
95% Percentile	102.4		
99% Percentile	115.6		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(b)fluoranthene Surface - All Soil			
General Statistics			
Number of Valid Data	40	Number of Detected Data	13
Number of Distinct Detected Data	12	Number of Non-Detect Data	27
Tolerance Factor	1.69	Percent Non-Detects	67.50%
Number of Missing Values	107		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	51	Minimum Detected	3.932
Maximum Detected	130	Maximum Detected	4.868
Mean of Detected	80.73	Mean of Detected	4.351
SD of Detected	24.86	SD of Detected	0.291
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	40
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.893	Shapiro Wilk Test Statistic	0.942
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	109.6	Mean (Log Scale)	4.662
SD	26.25	SD (Log Scale)	0.284
95% UTL 90% Coverage	154	95% UTL 90% Coverage	170.9
95% UPL (t)	154.4	95% UPL (t)	171.7
90% Percentile (z)	143.3	90% Percentile (z)	152.2
95% Percentile (z)	152.8	95% Percentile (z)	168.8
99% Percentile (z)	170.7	99% Percentile (z)	204.8
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	79.71
		SD in Original Scale	19.48
		Mean in Log Scale	4.351
		SD in Log Scale	0.237
		95% UTL 90% Coverage	115.7
		95% UPL (t)	116.1
		90% Percentile (z)	105
		95% Percentile (z)	114.4
		99% Percentile (z)	134.5

BACKGROUND STATISTICS

Benzo(b)fluoranthene Surface - All Soil (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	9.678	Data appear Normal at 5% Significance Level	
Theta Star	8.342		
nu star	251.6		
A-D Test Statistic	0.44	Nonparametric Statistics	
5% A-D Critical Value	0.734	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.185	Mean	80.73
5% K-S Critical Value	0.237	SD	23.88
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	6.894
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	121.1
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	186.1
Mean	81.99	95% KM UPL (t)	121.5
Median	85.37	90% Percentile (z)	111.3
SD	19.03	95% Percentile (z)	120
k star	17.11	99% Percentile (z)	136.3
Theta star	4.791	Gamma ROS Limits with Extrapolated Data	
Nu star	1369	95% Wilson Hilferty (WH) Approx. Gamma UPL	117.7
95% Percentile of Chisquare (2k)	48.88	95% Hawkins Wixley (HW) Approx. Gamma UPL	118.2
		95% WH Approx. Gamma UTL with 90% Coverage	117.3
90% Percentile	108.2	95% HW Approx. Gamma UTL with 90% Coverage	117.8
95% Percentile	117.1		
99% Percentile	135		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(k)fluoranthene Surface - Se			
General Statistics			
Number of Valid Data	20	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	19
Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!			
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).			
The data set for variable Benzo(k)fluoranthene Surface was not processed!			

BACKGROUND STATISTICS

Benzo(k)fluoranthene Surface - PM			
General Statistics			
Number of Valid Data	20	Number of Detected Data	6
Number of Distinct Detected Data	5	Number of Non-Detect Data	14
Tolerance Factor	1.926	Percent Non-Detects	70.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	52	Minimum Detected	3.951
Maximum Detected	69	Maximum Detected	4.234
Mean of Detected	57.83	Mean of Detected	4.053
SD of Detected	6.047	SD of Detected	0.1
Minimum Non-Detect	230	Minimum Non-Detect	5.438
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	20
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: There are only 6 Detected Values in this data			
Note: It should be noted that even though bootstrap may be performed on this data set			
the resulting calculations may not be reliable enough to draw conclusions			
It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.844	Shapiro Wilk Test Statistic	0.868
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	104.7	Mean (Log Scale)	4.592
SD	32.98	SD (Log Scale)	0.372
95% UTL 90% Coverage	168.2	95% UTL 90% Coverage	202.3
95% UPL (t)	163.2	95% UPL (t)	191
90% Percentile (z)	147	90% Percentile (z)	159.1
95% Percentile (z)	159	95% Percentile (z)	182.2
99% Percentile (z)	181.4	99% Percentile (z)	234.8
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	57.73
		SD in Original Scale	4.195
		Mean in Log Scale	4.053
		SD in Log Scale	0.071
		95% UTL 90% Coverage	66.02
		95% UPL (t)	65.3
		90% Percentile (z)	63.07
		95% Percentile (z)	64.72
		99% Percentile (z)	67.92

BACKGROUND STATISTICS

Benzo(k)fluoranthene Surface - PM (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	58.31	Data appear Normal at 5% Significance Level	
Theta Star	0.992		
nu star	699.7		
A-D Test Statistic	0.497	Nonparametric Statistics	
5% A-D Critical Value	0.696	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.309	Mean	57.83
5% K-S Critical Value	0.332	SD	5.52
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	2.469
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	68.47
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	82.49
Mean	58.19	95% KM UPL (t)	67.61
Median	58.4	90% Percentile (z)	64.91
SD	4.089	95% Percentile (z)	66.91
k star	184.8	99% Percentile (z)	70.68
Theta star	0.315	Gamma ROS Limits with Extrapolated Data	
Nu star	7393	95% Wilson Hilferty (WH) Approx. Gamma UPL	65.57
95% Percentile of Chisquare (2k)	415.5	95% Hawkins Wixley (HW) Approx. Gamma UPL	65.59
		95% WH Approx. Gamma UTL with 90% Coverage	66.25
90% Percentile	63.74	95% HW Approx. Gamma UTL with 90% Coverage	66.27
95% Percentile	65.41		
99% Percentile	68.61		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Benzo(k)fluoranthene Surface - All Soil			
General Statistics			
Number of Valid Data	40	Number of Detected Data	7
Number of Distinct Detected Data	6	Number of Non-Detect Data	33
Tolerance Factor	1.69	Percent Non-Detects	82.50%
Number of Missing Values	107		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	52	Minimum Detected	3.951
Maximum Detected	110	Maximum Detected	4.7
Mean of Detected	65.29	Mean of Detected	4.146
SD of Detected	20.48	SD of Detected	0.261
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	40
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: There are only 7 Detected Values in this data			
Note: It should be noted that even though bootstrap may be performed on this data set			
the resulting calculations may not be reliable enough to draw conclusions			
It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.673	Shapiro Wilk Test Statistic	0.738
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	114.1	Mean (Log Scale)	4.702
SD	26.09	SD (Log Scale)	0.291
95% UTL 90% Coverage	158.1	95% UTL 90% Coverage	180.2
95% UPL (t)	158.6	95% UPL (t)	181
90% Percentile (z)	147.5	90% Percentile (z)	159.9
95% Percentile (z)	157	95% Percentile (z)	177.8
99% Percentile (z)	174.7	99% Percentile (z)	216.9
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	64.39
		SD in Original Scale	13.39
		Mean in Log Scale	4.146
		SD in Log Scale	0.195
		95% UTL 90% Coverage	87.87
		95% UPL (t)	88.15
		90% Percentile (z)	81.14
		95% Percentile (z)	87.1
		99% Percentile (z)	99.51

BACKGROUND STATISTICS

Benzo(k)fluoranthene Surface - All Soil (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	8.834	Data do not follow a Discernable Distribution (0.05)	
Theta Star	7.39		
nu star	123.7		
A-D Test Statistic	0.981	Nonparametric Statistics	
5% A-D Critical Value	0.708	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.358	Mean	65.29
5% K-S Critical Value	0.312	SD	18.96
Data not Gamma Distributed at 5% Significance Level		SE of Mean	7.739
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	97.32
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	148.9
Mean	65.74	95% KM UPL (t)	97.62
Median	67.92	90% Percentile (z)	89.58
SD	13.3	95% Percentile (z)	96.47
k star	23.16	99% Percentile (z)	109.4
Theta star	2.839	Gamma ROS Limits with Extrapolated Data	
Nu star	1853	95% Wilson Hilferty (WH) Approx. Gamma UPL	90.07
95% Percentile of Chisquare (2k)	63.2	95% Hawkins Wixley (HW) Approx. Gamma UPL	90.37
		95% WH Approx. Gamma UTL with 90% Coverage	89.81
90% Percentile	83.74	95% HW Approx. Gamma UTL with 90% Coverage	90.1
95% Percentile	89.71		
99% Percentile	101.6		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Chrysene Surface - Se			
General Statistics			
Number of Valid Data	20	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	17
Warning: Data set has only 3 Detected Values.			
This is not enough to compute meaningful and reliable test statistics and estimates.			
No statistics will be produced!			
Tolerance Factor	1.926	Percent Non-Detects	85.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	54	Minimum Detected	3.989
Maximum Detected	140	Maximum Detected	4.942
Mean of Detected	90.33	Mean of Detected	4.425
SD of Detected	44.52	SD of Detected	0.481
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	270	Maximum Non-Detect	5.598
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	20
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: There are only 3 Distinct Detected Values in this data set			
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.			
Those methods will return a 'N/A' value on your output display!			
It is necessary to have 4 or more Distinct Values for bootstrap methods.			
However, results obtained using 4 to 9 distinct values may not be reliable.			
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.933	Shapiro Wilk Test Statistic	0.979
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	118.7	Mean (Log Scale)	4.755
SD	21.74	SD (Log Scale)	0.233
95% UTL 90% Coverage	160.5	95% UTL 90% Coverage	181.8
95% UPL (t)	157.2	95% UPL (t)	175.4
90% Percentile (z)	146.5	90% Percentile (z)	156.5
95% Percentile (z)	154.4	95% Percentile (z)	170.3
99% Percentile (z)	169.2	99% Percentile (z)	199.6
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	89.89
		SD in Original Scale	35.85
		Mean in Log Scale	4.425
		SD in Log Scale	0.395
		95% UTL 90% Coverage	178.6
		95% UPL (t)	168.1
		90% Percentile (z)	138.5
		95% Percentile (z)	159.8
		99% Percentile (z)	209.2

BACKGROUND STATISTICS

Chrysene Surface - Se (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	90.33
5% K-S Critical Value	N/A	SD	36.35
Data not Gamma Distributed at 5% Significance Level		SE of Mean	25.71
		95% KM UTL with 90% Coverage	160.3
Assuming Gamma Distribution		95% KM Chebyshev UPL	252.7
Gamma ROS Statistics with Extrapolated Data		95% KM UPL (t)	154.7
Mean	N/A	90% Percentile (z)	136.9
Median	N/A	95% Percentile (z)	150.1
SD	N/A	99% Percentile (z)	174.9
k star	N/A		
Theta star	N/A	Gamma ROS Limits with Extrapolated Data	
Nu star	N/A	95% Wilson Hilferty (WH) Approx. Gamma UPL	N/A
95% Percentile of Chisquare (2k)	N/A	95% Hawkins Wixley (HW) Approx. Gamma UPL	N/A
		95% WH Approx. Gamma UTL with 90% Coverage	N/A
90% Percentile	N/A	95% HW Approx. Gamma UTL with 90% Coverage	N/A
95% Percentile	N/A		
99% Percentile	N/A		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Chrysene Surface - PM			
General Statistics			
Number of Valid Data	20	Number of Detected Data	10
Number of Distinct Detected Data	10	Number of Non-Detect Data	10
Tolerance Factor	1.926	Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	55	Minimum Detected	4.007
Maximum Detected	91.5	Maximum Detected	4.516
Mean of Detected	72.65	Mean of Detected	4.274
SD of Detected	11.86	SD of Detected	0.162
Minimum Non-Detect	230	Minimum Non-Detect	5.438
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	20
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.952	Shapiro Wilk Test Statistic	0.966
5% Shapiro Wilk Critical Value	0.842	5% Shapiro Wilk Critical Value	0.842
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	98.2	Mean (Log Scale)	4.544
SD	28.69	SD (Log Scale)	0.305
95% UTL 90% Coverage	153.5	95% UTL 90% Coverage	169.4
95% UPL (t)	149	95% UPL (t)	161.6
90% Percentile (z)	135	90% Percentile (z)	139.1
95% Percentile (z)	145.4	95% Percentile (z)	155.5
99% Percentile (z)	164.9	99% Percentile (z)	191.4
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	72.33
		SD in Original Scale	9.134
		Mean in Log Scale	4.274
		SD in Log Scale	0.125
		95% UTL 90% Coverage	91.38
		95% UPL (t)	89.63
		90% Percentile (z)	84.29
		95% Percentile (z)	88.22
		99% Percentile (z)	96.08

BACKGROUND STATISTICS

Chrysene Surface - PM (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	29.68	Data appear Normal at 5% Significance Level	
Theta Star	2.448		
nu star	593.6		
A-D Test Statistic	0.225	Nonparametric Statistics	
5% A-D Critical Value	0.724	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.146	Mean	72.65
5% K-S Critical Value	0.266	SD	11.25
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	3.749
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	94.31
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	122.9
Mean	73.51	95% KM UPL (t)	92.58
Median	75.02	90% Percentile (z)	87.06
SD	9.083	95% Percentile (z)	91.15
k star	58.13	99% Percentile (z)	98.82
Theta star	1.264	Gamma ROS Limits with Extrapolated Data	
Nu star	2325	95% Wilson Hilferty (WH) Approx. Gamma UPL	90.47
95% Percentile of Chisquare (2k)	142.4	95% Hawkins Wixley (HW) Approx. Gamma UPL	90.6
		95% WH Approx. Gamma UTL with 90% Coverage	92.1
90% Percentile	86.1	95% HW Approx. Gamma UTL with 90% Coverage	92.26
95% Percentile	90.05		
99% Percentile	97.77		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Chrysene Surface - All Soil			
General Statistics			
Number of Valid Data	40	Number of Detected Data	13
Number of Distinct Detected Data	12	Number of Non-Detect Data	27
Tolerance Factor	1.69	Percent Non-Detects	67.50%
Number of Missing Values	107		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	54	Minimum Detected	3.989
Maximum Detected	140	Maximum Detected	4.942
Mean of Detected	76.73	Mean of Detected	4.309
SD of Detected	22.27	SD of Detected	0.25
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	40
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.801	Shapiro Wilk Test Statistic	0.907
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	108.4	Mean (Log Scale)	4.649
SD	27.18	SD (Log Scale)	0.288
95% UTL 90% Coverage	154.4	95% UTL 90% Coverage	170.2
95% UPL (t)	154.8	95% UPL (t)	171
90% Percentile (z)	143.3	90% Percentile (z)	151.3
95% Percentile (z)	153.1	95% Percentile (z)	168
99% Percentile (z)	171.7	99% Percentile (z)	204.5
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	75.84
		SD in Original Scale	16.3
		Mean in Log Scale	4.309
		SD in Log Scale	0.198
		95% UTL 90% Coverage	103.8
		95% UPL (t)	104.1
		90% Percentile (z)	95.77
		95% Percentile (z)	102.9
		99% Percentile (z)	117.7

BACKGROUND STATISTICS

Chrysene Surface - All Soil (Continued)			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	12.33	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	6.226		
nu star	320.5		
A-D Test Statistic	0.532	Nonparametric Statistics	
5% A-D Critical Value	0.733	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.19	Mean	76.73
5% K-S Critical Value	0.236	SD	21.4
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	6.177
Assuming Gamma Distribution		95% KM UTL with 90% Coverage	112.9
Gamma ROS Statistics with Extrapolated Data		95% KM Chebyshev UPL	171.2
Mean	77.81	95% KM UPL (t)	113.2
Median	79.75	90% Percentile (z)	104.2
SD	16	95% Percentile (z)	111.9
k star	24.08	99% Percentile (z)	126.5
Theta star	3.232	Gamma ROS Limits with Extrapolated Data	
Nu star	1926	95% Wilson Hilferty (WH) Approx. Gamma UPL	106
95% Percentile of Chisquare (2k)	65.35	95% Hawkins Wixley (HW) Approx. Gamma UPL	106.2
		95% WH Approx. Gamma UTL with 90% Coverage	105.7
90% Percentile	98.7	95% HW Approx. Gamma UTL with 90% Coverage	105.9
95% Percentile	105.6		
99% Percentile	119.4		
Note: DL/2 is not a recommended method.			

BACKGROUND STATISTICS

Dibenzo(a,h)anthracene Surface - Se			
General Statistics			
Number of Valid Data	20	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	20
<p align="center">Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs! Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit! The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</p>			
The data set for variable Dibenzo(a,h)anthracene Surface was not processed!			
Dibenzo(a,h)anthracene Surface - PM			
General Statistics			
Number of Valid Data	20	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	20
<p align="center">Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs! Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit! The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</p>			
The data set for variable Dibenzo(a,h)anthracene Surface was not processed!			
Dibenzo(a,h)anthracene Surface - All Soil			
General Statistics			
Number of Valid Data	40	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	40
<p align="center">Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs! Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit! The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</p>			
The data set for variable Dibenzo(a,h)anthracene Surface was not processed!			
Indeno(1,2,3-cd)pyrene Surface - Se			
General Statistics			
Number of Valid Data	20	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	19
<p align="center">Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set! It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).</p>			
The data set for variable Indeno(1,2,3-cd)pyrene Surface was not processed!			
Indeno(1,2,3-cd)pyrene Surface - PM			
General Statistics			
Number of Valid Data	20	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	19
<p align="center">Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set! It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).</p>			

BACKGROUND STATISTICS

The data set for variable Indeno(1,2,3-cd)pyrene Surface was not processed!			
Indeno(1,2,3-cd)pyrene Surface - All Soil			
General Statistics			
Number of Valid Data	40	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	38
Warning: Data set has only 2 Detected Values.			
This is not enough to compute meaningful and reliable test statistics and estimates.			
No statistics will be produced!			
Tolerance Factor	1.69	Percent Non-Detects	95.00%
Number of Missing Values	107		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	60	Minimum Detected	4.094
Maximum Detected	98	Maximum Detected	4.585
Mean of Detected	79	Mean of Detected	4.34
SD of Detected	26.87	SD of Detected	0.347
Minimum Non-Detect	170	Minimum Non-Detect	5.136
Maximum Non-Detect	310	Maximum Non-Detect	5.737
Data with Multiple Detection Limits		Single Detection Limit Scenario	
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect with Single DL	40
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected with Single DL	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
Warning: Data set has only 2 Distinct Detected Values.			
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.			
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).			
Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.			
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.			
Those methods will return a 'N/A' value on your output display!			
It is necessary to have 4 or more Distinct Values for bootstrap methods.			
However, results obtained using 4 to 9 distinct values may not be reliable.			
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.			
Background Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	122	Mean (Log Scale)	4.794
SD	14.8	SD (Log Scale)	0.147
95% UTL 90% Coverage	147	95% UTL 90% Coverage	154.9
95% UPL (t)	147.2	95% UPL (t)	155.2
90% Percentile (z)	140.9	90% Percentile (z)	145.9
95% Percentile (z)	146.3	95% Percentile (z)	153.9
99% Percentile (z)	156.4	99% Percentile (z)	170
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		95% UTL 90% Coverage	N/A
		95% UPL (t)	N/A

BACKGROUND STATISTICS

		90% Percentile (z)	N/A
		95% Percentile (z)	N/A
		99% Percentile (z)	N/A
Indeno(1,2,3-cd)pyrene Surface - All Soil			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	79
5% K-S Critical Value	N/A	SD	19
Data not Gamma Distributed at 5% Significance Level		SE of Mean	19
		95% KM UTL with 90% Coverage	111.1
Assuming Gamma Distribution		95% KM Chebyshev UPL	162.8
Gamma ROS Statistics with Extrapolated Data		95% KM UPL (t)	111.4
Mean	N/A	90% Percentile (z)	103.3
Median	N/A	95% Percentile (z)	110.3
SD	N/A	99% Percentile (z)	123.2
k star	N/A		
Theta star	N/A	Gamma ROS Limits with Extrapolated Data	
Nu star	N/A	95% Wilson Hilferty (WH) Approx. Gamma UPL	N/A
95% Percentile of Chisquare (2k)	N/A	95% Hawkins Wixley (HW) Approx. Gamma UPL	N/A
		95% WH Approx. Gamma UTL with 90% Coverage	N/A
		95% HW Approx. Gamma UTL with 90% Coverage	N/A
90% Percentile	N/A		
95% Percentile	N/A		
99% Percentile	N/A		

ATTACHMENT C

PRG CALCULATIONS FOR GROUNDWATER

RISK ASSESSMENT SPREADSHEET - CLEANUP LEVELS (PAGE 1 OF 3)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 LOCATION: TANK FARM 4
 EXPOSURE SCENARIO: CHILD RESIDENTS
 MEDIA: GROUNDWATER
 DATE: NOVEMBER 12, 2012

THIS SPREADSHEET CALCULATES CLEANUP LEVELS FOR EXPOSURES TO GROUNDWATER VIA INGESTION, DERMAL CONTACT, AND INHALATION

RELEVANT EQUATIONS:
$$PRG_{GW} = \frac{TCR}{Intake_{ing} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + Intake_{inh} \cdot IUR}$$

$$PRG_{GW} = \frac{THI}{\left(\frac{Intake_{ing}}{RfD_{oral}}\right) + \left(\frac{Intake_{derm}}{RfD_{derm}}\right) + \left(\frac{Intake_{inh}}{RfC}\right)}$$

$$Intake_{ing} = \frac{IR \times EF \times ED}{BW \times AT}$$

$$Intake_{derm} = \frac{DA_{Event} \times EV \times ED \times EF \times SA}{BW \times AT}$$

$$Intake_{inh} = \frac{K \times ET \times EF \times ED}{AT \times 24 \text{ hrs/day}}$$

For Inorganics $DA_{Event} = Kp \times CF \times t_{event}$

For Organics If $t_{event} \leq t^*$, then $DA_{Event} = 2 \times Kp \times FA \times CF \times \sqrt{\frac{6 \times \tau + t_{event}}{\pi}}$
 If $t_{event} > t^*$, then $DA_{Event} = Kp \times FA \times CF \times \left[\frac{t_{event}}{1+B} + 2 \times \tau \times \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right]$

Where:

Parameter	Child	Definition
TCR = :	1.0E-06	Target Cancer Risk
THI = :	1	Target Hazard Index
IR = :	1	Ingestion rate (L/day)
SA = :	6,600	Skin surface available for contact (cm ²)
DAevent = :	Chemical Specific	Absorbed dose per event (mg/cm ² -event)
EV = :	1	Event frequency (events/days)
EF = :	350	Exposure frequency (days/year)
ED = :	6	Exposure duration (years)
ET = :	24	Exposure time (hrs/day)
BW = :	15	Body weight (kg)
ATc = :	25,550	Averaging time for carcinogenic exposures (days)
ATn = :	2,190	Averaging time for noncarcinogenic exposures (days)
CF = :	0.001	Conversion Factor (L/m ³)
Kp = :	Chemical Specific	Permeability coefficient (cm/hr)
Cw = :	Chemical Specific	Concentration of chemical in water (mg/L)
t _{event} = :	1	duration of event (hr/event)
K = :	0.5	Volatilization Factor (L/m ³)
tau = :	Chemical Specific	Lag time (hr)
t* = :	Chemical Specific	Time it takes to reach steady state (hr)
B = :	Chemical Specific	Dimensionless constant
FA = :	Chemical Specific	Fraction absorbed (dimensionless)

RISK ASSESSMENT SPREADSHEET - DIRECT DERMAL CONTACT WITH GROUNDWATER (PAGE 2 OF 3)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 LOCATION: TANK FARM 4
 EXPOSURE SCENARIO: CHILD RESIDENTS
 MEDIA: GROUNDWATER
 DATE: NOVEMBER 12, 2012

CHEMICAL	Organic or Inorganic	Estimated Kp (cm/hr)	FA	tau-event (hr)	B	t* (hr)	DAevent (L/cm ² - event)
Endrin Aldehyde	Organic	5.09E-03	8.00E-01	1.43E+01	3.82E-02	3.42E+01	4.25E-05
Arsenic	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	1.00E-06
Cobalt	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	1.00E-06
Iron	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	1.00E-06
Manganese	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	1.00E-06

CHEMICAL	Cancer Slope Factor			Reference Dose			Volatile Yes or No
	Oral (mg/kg/day) ⁻¹	Dermal (mg/kg/day) ⁻¹	Inhalation (ug/m ³) ⁻¹	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m ³)	
Endrin Aldehyde	NA	NA	NA	3.00E-04	3.00E-04	NA	No
Arsenic	1.50E+00	1.50E+00	4.30E-03	3.00E-04	3.00E-04	1.50E-05	No
Cobalt	NA	NA	9.00E-03	3.00E-04	3.00E-04	6.00E-06	No
Iron	NA	NA	NA	7.00E-01	7.00E-01	NA	No
Manganese	NA	NA	NA	2.40E-02	9.60E-04	5.00E-05	No

CHEMICAL	Carcinogenic Intakes			Noncarcinogenic Intakes		
	Ingestion (L/kg/day)	Dermal (L/kg/day)	Inhalation (L/m ³)	Ingestion (L/kg/day)	Dermal (L/kg/day)	Inhalation (L/m ³)
Endrin Aldehyde	5.48E-03	1.54E-03	0.00E+00	6.39E-02	1.79E-02	0.00E+00
Arsenic	5.48E-03	3.62E-05	0.00E+00	6.39E-02	4.22E-04	0.00E+00
Cobalt	5.48E-03	3.62E-05	0.00E+00	6.39E-02	4.22E-04	0.00E+00
Iron	5.48E-03	3.62E-05	0.00E+00	6.39E-02	4.22E-04	0.00E+00
Manganese	5.48E-03	3.62E-05	0.00E+00	6.39E-02	4.22E-04	0.00E+00

RISK ASSESSMENT SPREADSHEET - DIRECT DERMAL CONTACT WITH GROUNDWATER (PAGE 3 OF 3)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
LOCATION: TANK FARM 4
EXPOSURE SCENARIO: CHILD RESIDENTS
MEDIA: GROUNDWATER
DATE: NOVEMBER 12, 2012

CHEMICAL	Groundwater Concentration	
	Carcinogenic (ug/L)	Noncarcinogenic (ug/L)
Endrin Aldehyde	NA	3.7
Arsenic	0.12	4.7
Cobalt	NA	4.7
Iron	NA	10878
Manganese	NA	322

RISK ASSESSMENT SPREADSHEET - CLEANUP LEVELS (PAGE 1 OF 3)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 LOCATION: TANK FARM 4
 EXPOSURE SCENARIO: ADULT RESIDENTS
 MEDIA: GROUNDWATER
 DATE: NOVEMBER 12, 2012

THIS SPREADSHEET CALCULATES CLEANUP LEVELS FOR EXPOSURES TO GROUNDWATER VIA INGESTION, DERMAL CONTACT, AND INHALATION

RELEVANT EQUATIONS:
$$PRG_{GW} = \frac{TCR}{Intake_{ing} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + Intake_{inh} \cdot IUR}$$

$$PRG_{GW} = \frac{THI}{\left(\frac{Intake_{ing}}{RfD_{oral}}\right) + \left(\frac{Intake_{derm}}{RfD_{derm}}\right) + \left(\frac{Intake_{inh}}{RfC}\right)}$$

$$Intake_{ing} = \frac{IR \times EF \times ED}{BW \times AT}$$

$$Intake_{derm} = \frac{DA_{Event} \times EV \times ED \times EF \times SA}{BW \times AT}$$

$$Intake_{inh} = \frac{K \times ET \times EF \times ED}{AT \times 24 \text{ hrs/day}}$$

For Inorganics $DA_{Event} = Kp \times CF \times tevent$

For Organics: If $tevent \leq t^*$, then $DA_{Event} = 2 \times Kp \times FA \times CF \times \sqrt{\frac{6 \times \tau + tevent}{\pi}}$

If $tevent > t^*$, then $DA_{Event} = Kp \times FA \times CF \times \left[\frac{tevent}{1+B} + 2 \times \tau \times \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right]$

Where:

Parameter	Value	Definition
TCR =	1.0E-06	Target Cancer Risk
THI =	1	Target Hazard Index
IR =	2	Ingestion rate (L/day)
SA =	18,000	Skin surface available for contact (cm ²)
DA _{Event} =	Chemical Specific	Absorbed dose per event (mg/cm ² -event)
EV =	1	Event frequency (events/days)
EF =	350	Exposure frequency (days/year)
ED =	24	Exposure duration (years)
ET =	24	Exposure time (hrs/day)
BW =	70	Body weight (kg)
AT _c =	25,550	Averaging time for carcinogenic exposures (days)
AT _n =	8,760	Averaging time for noncarcinogenic exposures (days)
CF =	0.001	Conversion Factor (L/m ³)
Kp =	Chemical Specific	Permeability coefficient (cm/hr)
Cw =	Chemical Specific	Concentration of chemical in water (mg/L)
tevent =	0.58	duration of event (hr/event)
K =	0.5	Volatilization Factor (L/m ³)
tau =	Chemical Specific	Lag time (hr)
t* =	Chemical Specific	Time it takes to reach steady state (hr)
B =	Chemical Specific	Dimensionless constant
FA =	Chemical Specific	Fraction absorbed (dimensionless)

RISK ASSESSMENT SPREADSHEET - DIRECT DERMAL CONTACT WITH GROUNDWATER (PAGE 2 OF 3)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 LOCATION: TANK FARM 4
 EXPOSURE SCENARIO: ADULT RESIDENTS
 MEDIA: GROUNDWATER
 DATE: NOVEMBER 12, 2012

CHEMICAL	Organic or Inorganic	Estimated Kp (cm/hr)	FA	tau-event (hr)	B	t* (hr)	DAevent (L/cm ² - event)
Aroclor-1248	Organic	5.61E-01	0.00E+00	4.53E+00	3.69E+00	1.95E+01	0.00E+00
Aroclor-1254	Organic	7.13E-01	0.00E+00	7.07E+00	4.96E+00	3.10E+01	0.00E+00
Endrin Aldehyde	Organic	5.09E-03	8.00E-01	1.43E+01	3.82E-02	3.42E+01	3.24E-05
Arsenic	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	5.80E-07
Cobalt	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	5.80E-07
Iron	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	5.80E-07
Manganese	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	5.80E-07

CHEMICAL	Cancer Slope Factor			Reference Dose			Volatile Yes or No
	Oral (mg/kg/day) ⁻¹	Dermal (mg/kg/day) ⁻¹	Inhalation (ug/m ³) ⁻¹	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m ³)	
Aroclor-1248	2.00E+00	2.00E+00	5.70E-04	NA	NA	NA	No
Aroclor-1254	2.00E+00	2.00E+00	5.70E-04	2.00E-05	2.00E-05	NA	No
Endrin Aldehyde	NA	NA	NA	3.00E-04	3.00E-04	NA	No
Arsenic	1.50E+00	1.50E+00	4.30E-03	3.00E-04	3.00E-04	1.50E-05	No
Cobalt	NA	NA	9.00E-03	3.00E-04	3.00E-04	6.00E-06	No
Iron	NA	NA	NA	7.00E-01	7.00E-01	NA	No
Manganese	NA	NA	NA	2.40E-02	9.60E-04	5.00E-05	No

CHEMICAL	Carcinogenic Intakes			Noncarcinogenic Intakes		
	Ingestion (L/kg/day)	Dermal (L/kg/day)	Inhalation (L/m ³)	Ingestion (L/kg/day)	Dermal (L/kg/day)	Inhalation (L/m ³)
Aroclor-1248	9.39E-03	0.00E+00	0.00E+00	2.74E-02	0.00E+00	0.00E+00
Aroclor-1254	9.39E-03	0.00E+00	0.00E+00	2.74E-02	0.00E+00	0.00E+00
Endrin Aldehyde	9.39E-03	2.74E-03	0.00E+00	2.74E-02	7.99E-03	0.00E+00
Arsenic	9.39E-03	4.90E-05	0.00E+00	2.74E-02	1.43E-04	0.00E+00
Cobalt	9.39E-03	4.90E-05	0.00E+00	2.74E-02	1.43E-04	0.00E+00
Iron	9.39E-03	4.90E-05	0.00E+00	2.74E-02	1.43E-04	0.00E+00
Manganese	9.39E-03	4.90E-05	0.00E+00	2.74E-02	1.43E-04	0.00E+00

RISK ASSESSMENT SPREADSHEET - DIRECT DERMAL CONTACT WITH GROUNDWATER (PAGE 3 OF 3)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
LOCATION: TANK FARM 4
EXPOSURE SCENARIO: ADULT RESIDENTS
MEDIA: GROUNDWATER
DATE: NOVEMBER 12, 2012

CHEMICAL	Groundwater Concentration	
	Carcinogenic (ug/L)	Noncarcinogenic (ug/L)
Aroclor-1248	0.053	NA
Aroclor-1254	0.053	0.73
Endrin Aldehyde	NA	8.5
Arsenic	0.071	11
Cobalt	NA	11
Iron	NA	25417
Manganese	NA	775

RISK ASSESSMENT SPREADSHEET - CLEANUP LEVELS (PAGE 1 OF 2)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 LOCATION: TANK FARM 4
 EXPOSURE SCENARIO: LIFELONG RESIDENTS
 MEDIA: GROUNDWATER
 DATE: NOVEMBER 12, 2012

THIS SPREADSHEET CALCULATES CLEANUP LEVELS FOR EXPOSURES TO GROUNDWATER VIA INGESTION, DERMAL CONTACT, AND INHALATION

RELEVANT EQUATIONS:
$$PRG_{GW} = \frac{TCR}{Intake_{ing} \cdot CSF_{oral} + Intake_{derm} \cdot CSF_{derm} + Intake_{inh} \cdot IUR}$$

$$PRG_{GW} = \frac{THI}{\left(\frac{Intake_{ing}}{RfD_{oral}}\right) + \left(\frac{Intake_{derm}}{RfD_{derm}}\right) + \left(\frac{Intake_{inh}}{RfC}\right)}$$

$$Intake_{ing} = \frac{IR \times EF \times ED}{BW \times AT}$$

$$Intake_{derm} = \frac{DA_{Event} \times EV \times ED \times EF \times SA}{BW \times AT}$$

$$Intake_{inh} = \frac{K \times ET \times EF \times ED}{AT \times 24 \text{ hrs/day}}$$

For Inorganics $DA_{Event} = Kp \times CF \times tevent$

For Organics If $tevent \leq t^*$, then $DA_{Event} = 2 \times Kp \times FA \times CF \times \sqrt{\frac{6 \times tau \div tevent}{\pi}}$

If $tevent > t^*$, then $DA_{Event} = Kp \times FA \times CF \times \left[\frac{tevent}{1+B} + 2 \times tau \times \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right]$

Where:

Parameter	Child	Adult	Definition
TCR = :	1.0E-06	1.0E-06	Target Cancer Risk
THI = :	1	1	Target Hazard Index
IR = :	1	2	Ingestion rate (L/day)
SA = :	6,600	18,000	Skin surface available for contact (cm ²)
DA _{Event} = :	Chemical Specific		Absorbed dose per event (mg/cm ² -event)
EV = :	1	1	Event frequency (events/days)
EF = :	350	350	Exposure frequency (days/year)
ED = :	6	24	Exposure duration (years)
ET = :	24	24	Exposure time (hrs/day)
BW = :	15	70	Body weight (kg)
AT _c = :	25,550	25,550	Averaging time for carcinogenic exposures (days)
AT _n = :	2,190	8,760	Averaging time for noncarcinogenic exposures (days)
CF = :	0.001	0.001	Conversion Factor (L/m ³)
Kp = :	Chemical Specific		Permeability coefficient (cm/hr)
Cw = :	Chemical Specific		Concentration of chemical in water (mg/L)
tevent = :	1	0.58	duration of event (hr/event)
K = :	0.5	0.5	Volatilization Factor (L/m ³)
tau = :	Chemical Specific		Lag time (hr)
t* = :	Chemical Specific		Time it takes to reach steady state (hr)
B = :	Chemical Specific		Dimensionless constant
FA = :	Chemical Specific		Fraction absorbed (dimensionless)

RISK ASSESSMENT SPREADSHEET - DIRECT DERMAL CONTACT WITH GROUNDWATER (PAGE 2 OF 2)

SITE NAME: NAVAL STATION NEWPORT, MIDDLETOWN, RHODE ISLAND
 LOCATION: TANK FARM 4
 EXPOSURE SCENARIO: LIFELONG RESIDENTS
 MEDIA: GROUNDWATER
 DATE: NOVEMBER 12, 2012

CHEMICAL	Organic or Inorganic	Estimated Kp (cm/hr)	FA	tau-event (hr)	B	t* (hr)	DAevent (L/cm ² - event)	
							Child	Adult
Endrin Aldehyde	Organic	5.09E-03	8.00E-01	1.43E+01	3.82E-02	3.42E+01	4.25E-05	3.24E-05
Arsenic	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	1.00E-06	1.00E-06
Cobalt	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	1.00E-06	1.00E-06
Iron	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	1.00E-06	1.00E-06
Manganese	Inorganic	1.00E-03	1.00E+00	NA	NA	NA	1.00E-06	1.00E-06

CHEMICAL	Cancer Slope Factor			Reference Dose			Volatile Yes or No
	Oral (mg/kg/day) ⁻¹	Dermal (mg/kg/day) ⁻¹	Inhalation (ug/m ³) ⁻¹	Oral (mg/kg/day)	Dermal (mg/kg/day)	Inhalation (mg/m ³)	
Endrin Aldehyde	NA	NA	NA	3.00E-04	3.00E-04	NA	No
Arsenic	1.50E+00	1.50E+00	4.30E-03	3.00E-04	3.00E-04	1.50E-05	No
Cobalt	NA	NA	9.00E-03	3.00E-04	3.00E-04	6.00E-06	No
Iron	NA	NA	NA	7.00E-01	7.00E-01	NA	No
Manganese	NA	NA	NA	2.40E-02	9.60E-04	5.00E-05	No

CHEMICAL	Carcinogenic Intakes			Noncarcinogenic Intakes		
	Ingestion (L/kg/day)	Dermal (L/kg/day)	Inhalation (L/m ³)	Ingestion (L/kg/day)	Dermal (L/kg/day)	Inhalation (L/m ³)
Endrin Aldehyde	1.49E-02	4.28E-03	0.00E+00	6.39E-02	1.79E-02	0.00E+00
Arsenic	1.49E-02	1.21E-04	0.00E+00	6.39E-02	4.22E-04	0.00E+00
Cobalt	1.49E-02	1.21E-04	0.00E+00	6.39E-02	4.22E-04	0.00E+00
Iron	1.49E-02	1.21E-04	0.00E+00	6.39E-02	4.22E-04	0.00E+00
Manganese	1.49E-02	1.21E-04	0.00E+00	6.39E-02	4.22E-04	0.00E+00

CHEMICAL	Groundwater Concentration	
	Carcinogenic (ug/L)	Noncarcinogenic (ug/L)
Endrin Aldehyde	NA	3.7
Arsenic	0.044	4.7
Cobalt	NA	4.7
Iron	NA	10878
Manganese	NA	322

B2 – RECALCULATION OF PRELIMINARY REMEDIATION GOALS – SOIL WITHOUT HOT-SPOT

TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil (0 - 1 feet)
Exposure Medium: Surface Soil (0 - 1 feet)

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean *	95% UCL (Distribution) *	Maximum Concentration (Qualifier) *	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Tank Farm 4	Benzo(a)anthracene	mg/kg	0.063	0.14 (NP)	0.18	0.14	mg/kg	97.5% KM (Chebyshev)	ProUCL 4.1.00
	Benzo(a)pyrene	mg/kg	0.06	0.14 (NP)	0.23	0.14	mg/kg	97.5% KM (Chebyshev)	ProUCL 4.1.00
	Benzo(b)fluoranthene	mg/kg	0.098	0.18 (G)	0.32	0.18	mg/kg	95% KM (Chebyshev)	ProUCL 4.1.00
	Benzo(g,h,i)perylene	mg/kg	0.05	0.094 (G)	0.19	0.094	mg/kg	95% KM (Chebyshev)	ProUCL 4.1.00
	Benzo(k)fluoranthene	mg/kg	0.12	0.51 (L)	1.5	0.51	mg/kg	99% KM (Chebyshev)	ProUCL 4.1.00
	Chrysene	mg/kg	0.70	2.7 (NP)	15	6.9	mg/kg	99% KM (Chebyshev)	ProUCL 4.1.00
	Dibenzo(a,h)anthracene	mg/kg	0.014	0.02 (N)	0.048	0.02	mg/kg	95% KM (t)	ProUCL 4.1.00
	Fluoranthene	mg/kg	0.12	0.22 (G)	0.47	0.22	mg/kg	95% KM (Chebyshev)	ProUCL 4.1.00
	Indeno(1,2,3-cd)pyrene	mg/kg	0.046	0.092 (G)	0.18	0.092	mg/kg	95% KM (Chebyshev)	ProUCL 4.1.00
	Pyrene	mg/kg	0.097	39.4 (L)	0.35	0.22	mg/kg	97.5% KM (Chebyshev)	ProUCL 4.1.00
	2,3,7,8-TCDD Equivalents	mg/kg	0.0000026	0.0000031(G)	0.0000073	0.0000031	mg/kg	95% Approximate Gamma	ProUCL 4.1.00
	Arsenic	mg/kg	12.2	21.7 (NP)	59.5	21.7	mg/kg	95% Chebyshev (Mean, Sd)	ProUCL 4.1.00
	Beryllium	mg/kg	0.37	0.43 (N)	0.79	0.43	mg/kg	95% Student's t	ProUCL 4.1.00
	Cobalt	mg/kg	11.8	13.3 (N)	20.5	13.3	mg/kg	95% Student's t	ProUCL 4.1.00
Iron	mg/kg	30179	35230 (G)	63300	35230	mg/kg	95% Approximate Gamma	ProUCL 4.1.00	
Manganese (soil)	mg/kg	387	450 (N)	818	450	mg/kg	95% Student's t	ProUCL 4.1.00	

G = Gamma

N = Normal

NP = Non-parametric

* Data from samples collected at SB934 removed from this dataset

Exposure point concentrations for the RME scenarios are also the exposure point concentrations for the CTE scenarios.

TABLE 3.2.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface/Subsurface Soil (0 - 10 feet)
Exposure Medium: Surface/Subsurface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean *	95% UCL (Distribution) *	Maximum Concentration (Qualifier) *	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Tank Farm 4	Benzo(a)anthracene	mg/kg	0.032	0.061 (NP)	0.18	0.061	mg/kg	95% KM (Chebyshev)	ProUCL 4.1.00
	Benzo(a)pyrene	mg/kg	0.029	0.058 (NP)	0.23	0.058	mg/kg	95% KM (Chebyshev)	ProUCL 4.1.00
	Benzo(b)fluoranthene	mg/kg	0.050	0.068 (G)	0.32	0.068	mg/kg	95% KM (BCA)	ProUCL 4.1.00
	Benzo(g,h,i)perylene	mg/kg	0.026	0.036 (G)	0.19	0.036	mg/kg	95% KM (t)	ProUCL 4.1.00
	Benzo(k)fluoranthene	mg/kg	0.073	0.21 (NP)	1.5	0.21	mg/kg	95% KM (Chebyshev)	ProUCL 4.1.00
	Chrysene	mg/kg	0.490	2.5 (NP)	15	2.5	mg/kg	97.5% KM (Chebyshev)	ProUCL 4.1.00
	Dibenzo(a,h)anthracene	mg/kg	0.008	0.011 (G)	0.048	0.011	mg/kg	95% KM (t)	ProUCL 4.1.00
	Fluoranthene	mg/kg	0.058	0.11 (L)	0.47	0.11	mg/kg	95% KM (Chebyshev)	ProUCL 4.1.00
	Indeno(1,2,3-cd)pyrene	mg/kg	0.024	0.034 (G)	0.18	0.034	mg/kg	95% KM (t)	ProUCL 4.1.00
	Pyrene	mg/kg	0.050	0.095(NP)	0.35	0.095	mg/kg	95% KM (Chebyshev)	ProUCL 4.1.00
	Aroclor-1254	mg/kg	(1)	(1)	0.1	0.1	mg/kg	Maximum Detected Concentration	(1)
	2,3,7,8-TCDD Equivalents	mg/kg	0.000002	0.0000027 (G)	0.0000097	0.0000027	mg/kg	95% Approximate Gamma	ProUCL 4.1.00
	Arsenic	mg/kg	14.3	19.5 (NP)	59.5	19.5	mg/kg	95% Chebyshev(Mean, Sd)	ProUCL 4.1.00
	Beryllium	mg/kg	0.362	0.40 (G)	0.79	0.4	mg/kg	95% Approximate Gamma	ProUCL 4.1.00
	Cobalt	mg/kg	17.2	19.5 (L)	41	19.5	mg/kg	95% H-UCL	ProUCL 4.1.00
	Iron	mg/kg	38992	42012 (N)	76900	42012	mg/kg	95% Student's t	ProUCL 4.1.00
Manganese (soil)	mg/kg	648	1064 (NP)	4480	1064	mg/kg	95% Chebyshev(Mean, Sd)	ProUCL 4.1.00	
Thallium	mg/kg	0.979	2.2 (G)	11.8	1.9	mg/kg	95% KM (t)	ProUCL 4.1.00	

G = Gamma

N = Normal

NP = Non-parametric

* Data from samples collected at SB934 removed from this dataset

1 - Only one detected concentration meaningful statistics cannot be computed.

Exposure point concentrations for the RME scenarios are also the exposure point concentrations for the CTE scenarios.

TABLE 4.11.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE - CHILD RECREATIONAL USERS - SOILS
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Ingestion	Recreational User	Child	Tank Farms 4 & 5	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) = $CS \times IRS \times CF3 \times FI \times EF \times ED$ $BW \times AT$
				IR-S	Ingestion Rate	200	mg/day	USEPA, 1997	
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				FI	Fraction Ingested	1	unitless	--	
				EF	Exposure Frequency	48	days/year	(1)	
				ED1	Exposure Duration (Age 0 - 2)	2	years	(2), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(2), USEPA, 1989, 2005	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	days	USEPA, 1989	
				Dermal	Recreational User	Child	Tank Farms 4 & 5	CS	
CF3	Conversion Factor 3	0.000001	kg/mg					--	
SA	Skin Surface Available for Contact	2,800	cm2					USEPA, 2004	
SSAF	Soil to Skin Adherence Factor	0.2	mg/cm2/event					USEPA, 2004	
DABS	Absorption Factor	Chemical Specific	unitless					USEPA, 2004	
EV	Events Frequency	1	events/day					USEPA, 2004	
EF	Exposure Frequency	48	days/year					(1)	
ED1	Exposure Duration (Age 0 - 2)	2	years					(2), USEPA, 1989, 2005	
ED2	Exposure Duration (Age 2 - 6)	4	years					(2), USEPA, 1989, 2005	
BW	Body Weight	15	kg					USEPA, 1997	
AT-C	Averaging Time (Cancer)	25550	days					USEPA, 1989	
AT-N	Averaging Time (Non-Cancer)	2190	days					USEPA, 1989	

Notes:

1 - Assumes four days for twelve weeks.

2 - Children were evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential children were evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. USEPA/600/8-95/002FA.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

Unit Intake Calculations

Incidental Ingestion Intake = $(IR-S \times CF3 \times FI \times EF \times ED) / (BW \times AT)$

Dermal Intake = $(CF3 \times SA \times SSAF \times EF \times ED) / (BW \times AT)$

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Age 0 - 6) = 1.50E-07 Cancer Dermal Intake (Age 0 - 6) = 4.21E-07

Mutagenic Chemicals

Cancer Ingestion Intake (Age 0 - 2) = 5.01E-08 Cancer Dermal Intake (Age 0 - 2) = 1.40E-07

Cancer Ingestion Intake (Age 2 - 6) = 1.00E-07 Cancer Dermal Intake (Age 2 - 6) = 2.81E-07

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 1.75E-06 Noncancer Dermal Intake = 4.91E-06

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.12.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE - CHILD RECREATIONAL USERS - SOILS TO AIR
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Recreational User	Child	Tank Farms 4 & 5	CA	Chemical concentration in air	Calculated	mg/m ³	USEPA, 2002a	$\text{Exposure Concentration (mg/m}^3\text{)} = \frac{\text{CA} \times \text{ET} \times \text{EF} \times \text{ED}}{\text{AT} \times 24 \text{ hours/day}}$ $\text{CA} = (1/\text{PEF} + 1/\text{VF}) \times \text{Cs}$
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	8	hours/day	(1)	
				EF	Exposure Frequency	48	days/year	(1)	
				ED1	Exposure Duration (Age 0 - 2)	2	years	(2), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(2), USEPA, 1989, 2005	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.10E+10	m ³ /kg	USEPA 2011	
				VF	Volatilization Factor	Chemical-specific	m ³ /kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m ² -s per kg/m ³	USEPA 2011	
				Ut	Equivalent threshold of wind velocity at 7m.	11.32	m/sec	USEPA 2011	
				Um	Mean annual wind speed	3.84	m/sec	USEPA 2011	
				V	Fraction of vegetative cover	0.5	unitless	USEPA 2011	
				F(x)	Function dependent of Um/Ut	0.0345	unitless	USEPA 2011	

Notes:

1 - Assumes 8 hours a day, 4 days for twelve weeks.

2 - Children were evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential children were evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. USEPA/600/8-95/002FA.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2011: Soil Screening Guidance calculation Internet site at http://risk.lsd.onrl.gov/calc_start.htm. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

$$\text{Unit Exposure Concentration} = (\text{ET} \times \text{EF} \times \text{ED}) / (\text{AT} \times 24 \text{ hours/day})$$

Non-Mutagenic Chemicals

$$\text{Cancer Inhalation Intake (Age 0 - 6)} = 3.76\text{E-}03 \qquad \text{Noncancer Inhalation Intake} = 4.38\text{E-}02$$

Mutagenic Chemicals

$$\text{Cancer Inhalation Intake (Age 0 - 2)} = 1.25\text{E-}03$$

$$\text{Cancer Inhalation Intake (Age 2 - 6)} = 2.50\text{E-}03$$

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.15.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE - ADULT RECREATIONAL USERS - SOILS
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Ingestion	Recreational User	Adult	Tank Farms 4 & 5	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) = $\frac{CS \times IRS \times CF3 \times FI \times EF \times ED}{BW \times AT}$
				IR-S	Ingestion Rate	100	mg/day	USEPA, 1997	
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				FI	Fraction Ingested	1	unitless	--	
				EF	Exposure Frequency	48	days/year	(1)	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(2), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 16 - 30)	14	years	(2), USEPA, 1989, 2005	
				BW	Body Weight	70	kg	USEPA, 1987	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	
Dermal	Recreational User	Adult	Tank Farms 4 & 5	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) = $\frac{CS \times CF3 \times SA \times SSAF \times DABS \times EV \times EF \times ED}{BW \times AT}$
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				SA	Skin Surface Available for Contact	5,700	cm2	USEPA, 2004	
				SSAF	Soil to Skin Adherence Factor	0.07	mg/cm2/event	USEPA, 2004	
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	48	days/year	(1)	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(2), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 16 - 30)	14	years	(2), USEPA, 1989, 2005	
				BW	Body Weight	70	kg	USEPA, 1987	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	

Notes:

1 - Assumes four days for twelve weeks.

2 - Adults were evaluated as one age group (7 - 30 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential adults were evaluated as two age groups, 7 - 16 years and 16 - 30 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 30) = 6.44E-08 Cancer Dermal Intake (Age 6 - 30) = 2.57E-07

Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 16) = 2.68E-08 Cancer Dermal Intake (Age 6 - 16) = 1.07E-07

Cancer Ingestion Intake Age 16 - 30) = 3.76E-08 Cancer Dermal Intake (Age 16 - 30) = 1.50E-07

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 1.88E-07 Noncancer Dermal Intake = 7.50E-07

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.16.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE - ADULT RECREATIONAL USERS - SOILS TO AIR
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Recreational User	Adult	Tank Farms 4 & 5	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	$\text{Exposure Concentration (mg/m}^3\text{)} = \frac{\text{CA} \times \text{ET} \times \text{EF} \times \text{ED}}{\text{AT} \times 24 \text{ hours/day}}$ $\text{CA} = (1/\text{PEF} + 1/\text{VF}) \times \text{Cs}$
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	8	hours/day	(1)	
				EF	Exposure Frequency	48	days/year	(1)	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(2), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 16 - 30)	14	years	(2), USEPA, 1989, 2005	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8760	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA, 2002a	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2011	
				Ut	Equivalent threshold of wind velocity at 7m.	11.32	m/sec	USEPA 2011	
				Um	Mean annual wind speed	3.84	m/sec	USEPA 2011	
				V	Fraction of vegetative cover	0.5	unitless	USEPA 2011	
				F(x)	Function dependent of Um/Ut	0.0345	unitless	USEPA 2011	

Notes:

1 - Assumes 8 hours a day 4 days for twelve weeks.

2 - Adults were evaluated as one age group (7 - 30 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential adults were evaluated as two age groups, 7 - 16 years and 16 - 30 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. USEPA/600/8-95/002FA.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2011: Soil Screening Guidance calculation Internet site at http://risk.lsd.onrl.gov/calc_start.htm. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 30) = 1.50E-02

Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 16) = 6.26E-03

Cancer Inhalation Intake (Age 16 - 30) = 8.77E-03

Noncarcinogenic Chemicals

Noncancer Inhalation Intake = 4.38E-02

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.19.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE - CHILD RESIDENTS - SOILS
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Child	Tank Farms 4 & 5	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) = $\frac{CS \times IRS \times CF3 \times FI \times EF \times ED}{BW \times AT}$
				IR-S	Ingestion Rate	200	mg/day	USEPA, 1997;RIDEM, 2004	
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				FI	Fraction Ingested	1	unitless	--	
				EF	Exposure Frequency	350	days/year	USEPA, 2004;RIDEM, 2004	
				ED1	Exposure Duration (Age 0 - 2)	2	years	(1), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(1), USEPA, 1989, 2005	
				BW	Body Weight	15	kg	USEPA, 1997;RIDEM, 2004	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989;RIDEM, 2004	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	
Dermal	Resident	Child	Tank Farms 4 & 5	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) = $\frac{CS \times CF3 \times SA \times SSAF \times DABS \times EV \times EF \times ED}{BW \times AT}$
				CF3	Conversion Factor 3	1E-06	kg/mg	--	
				SA	Skin Surface Available for Contact	2,800	cm2	USEPA, 2004	
				SSAF	Soil to Skin Adherence Factor	0.2	mg/cm2/event	USEPA, 2004	
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	350	days/year	USEPA, 2004	
				ED1	Exposure Duration (Age 0 - 2)	2	years	(1), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(1), USEPA, 1989, 2005	
				BW	Body Weight	15	kg	USEPA, 1997	
AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989					
AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989					

Notes:

1 - Children were evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential children were evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. USEPA/600/8-95/002FA.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

RIDEM, 2004: Rhode Island Department of Environmental Management, DEM-DSR-01-93, February 2004.

Unit Intake Calculations

$$\text{Incidental Ingestion Intake} = (IR-S \times CF3 \times FI \times EF \times ED) / (BW \times AT)$$

$$\text{Dermal Intake} = (CF3 \times SA \times SSAF \times EF \times ED) / (BW \times AT)$$

Non-Mutagenic Chemicals

$$\text{Cancer Ingestion Intake (Age 0 - 6)} = 1.10E-06 \quad \text{Cancer Dermal Intake (Age 0 - 6)} = 3.07E-06$$

Mutagenic Chemicals

$$\text{Cancer Ingestion Intake (Age 0 - 2)} = 3.65E-07 \quad \text{Cancer Dermal Intake (Age 0 - 2)} = 1.02E-06$$

$$\text{Cancer Ingestion Intake (Age 2 - 6)} = 7.31E-07 \quad \text{Cancer Dermal Intake (Age 2 - 6)} = 2.05E-06$$

Noncarcinogenic Chemicals

$$\text{Noncancer Ingestion Intake} = 1.28E-05 \quad \text{Noncancer Dermal Intake} = 3.58E-05$$

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.20.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE - CHILD RESIDENTS SOILS TO AIR
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation	Resident	Child	Tank Farms 4 & 5	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	$\text{Exposure Concentration (mg/m}^3\text{)} = \frac{\text{CA} \times \text{ET} \times \text{EF} \times \text{ED}}{\text{AT} \times 24 \text{ hours/day}}$ $\text{CA} = (1/\text{PEF} + 1/\text{VF}) \times \text{Cs}$
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	24	hours/day	USEPA, 2002a	
				EF	Exposure Frequency	350	days/year	USEPA, 2002a;RIDEM, 2004	
				ED1	Exposure Duration (Age 0 - 2)	2	years	(1), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(1), USEPA, 1989, 2005	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA, 2002a	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2011	
				Ut	Equivalent threshold of wind velocity at 7m.	11.32	m/sec	USEPA 2011	
				Um	Mean annual wind speed	3.84	m/sec	USEPA 2011	
				V	Fraction of vegetative cover	0.5	unitless	USEPA 2011	
F(x)	Function dependent of Um/Ut	0.0345	unitless	USEPA 2011					

Notes:

1 - Children were evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential children were evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. USEPA/600/8-95/002FA.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2011: Soil Screening Guidance calculation Internet site at http://risk.lsd.ornl.gov/calc_start.htm. Site-specific values for Hartford, Connecticut.

RIDEM, 2004: Rhode Island Department of Environmental Management, DEM-DSR-01-93, February 2004.

Unit Intake Calculations

$$\text{Unit Exposure Concentration} = (\text{ET} \times \text{EF} \times \text{ED}) / (\text{AT} \times 24 \text{ hours/day})$$

Non-Mutagenic Chemicals

$$\text{Cancer Inhalation Intake (Age 0 - 6)} = 8.22\text{E-}02$$

Mutagenic Chemicals

$$\text{Cancer Inhalation Intake (Age 0 - 2)} = 2.74\text{E-}02$$

$$\text{Cancer Inhalation Intake (Age 2 - 6)} = 5.48\text{E-}02$$

Noncarcinogenic Chemicals

$$\text{Noncancer Inhalation Intake} = 9.59\text{E-}01$$

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.22.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE - ADULT RESIDENTS - SOILS
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Ingestion	Resident	Adult	Tank Farms 4 & 5	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002a	Intake (mg/kg/day) = $\frac{CS \times IRS \times CF3 \times FI \times EF \times ED}{BW \times AT}$
				IR-S	Ingestion Rate	100	mg/day	USEPA, 1997; RIDEM, 2004	
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				FI	Fraction Ingested	1	unitless	--	
				EF	Exposure Frequency	350	days/year	USEPA, 2002b	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(1), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 16 - 30)	14	years	(1), USEPA, 1989, 2005	
				BW	Body Weight	70	kg	USEPA, 1997; RIDEM, 2004	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989; RIDEM, 2004	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989	
Dermal	Resident	Adult	Tank Farms 4 & 5	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) = $\frac{CS \times CF3 \times SA \times SSAF \times DABS \times EV \times EF \times ED}{BW \times AT}$
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				SA	Skin Surface Available for Contact	5,700	cm2	USEPA, 2004	
				SSAF	Soil to Skin Adherence Factor	0.07	mg/cm2/event	USEPA, 2004	
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	350	days/year	USEPA, 2002b	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(1), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 16 - 30)	14	years	(1), USEPA, 1989, 2005	
				BW	Body Weight	70	kg	USEPA, 1997	
AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989					
AT-N	Averaging Time (Non-Cancer)	8,760	days	USEPA, 1989					

Notes:

1 - Adults were evaluated as one age group (7 - 30 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential adults were evaluated as two age groups, 7 - 16 years and 16 - 30 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

- USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.
- USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.
- USEPA, 2002a: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.
- USEPA, 2002b: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.
- USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.
- RIDEM, 2004: Rhode Island Department of Environmental Management, DEM-DSR-01-93, February 2004.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 30) = 4.70E-07 Cancer Dermal Intake (Age 6 - 30) = 1.87E-06

Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 16) = 1.96E-07 Cancer Dermal Intake (Age 6 - 16) = 7.81E-07

Cancer Ingestion Intake (Age 16 - 30) = 2.74E-07 Cancer Dermal Intake (Age 16 - 30) = 1.09E-06

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 1.37E-06 Noncancer Dermal Intake = 5.47E-06

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.23.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE - ADULT RESIDENTS - SOILS TO AIR
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/Reference	Intake Equation/Model Name
Inhalation	Resident	Adult	Tank Farms 4 & 5	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m ³) = $\frac{CA \times ET \times EF \times ED}{AT \times 24 \text{ hours/day}}$ $CA = (1/PEF + 1/VF) \times Cs$ $PEF = \frac{Q}{C \times 3600}$ $0.036 \times (1 - V) \times (U_m / U_t)^2 \times F(x)$ $F(x) = 0.18 * (8x^3 + 12x) * \exp(-x^2)$ $x = 0.886 * U_t / U_m$
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	24	hours/day	USEPA, 2002a	
				EF	Exposure Frequency	350	days/year	USEPA, 2002a; RIDEM, 2004	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(1), USEPA, 1989, 2005	
				ED2	Exposure Duration (Age 16 - 30)	14	years	(1), USEPA, 1989, 2005	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8760	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA, 2002a	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2011	
				Ut	Equivalent threshold of wind velocity at 7m.	11.32	m/sec	USEPA 2011	
				Um	Mean annual wind speed	3.84	m/sec	USEPA 2011	
				V	Fraction of vegetative cover	0.5	unitless	USEPA 2011	
F(x)	Function dependent of Um/Ut	0.0345	unitless	USEPA 2011					

Notes:
1 - Adults were evaluated as one age group (7 - 30 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential adults were evaluated as two age groups, 7 - 16 years and 16 - 30 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:
USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.
USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.
USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.
USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.
USEPA, 2011: Soil Screening Guidance calculation Internet site at http://risk.lsd.ornl.gov/calc_start.htm. Site-specific values for Hartford, Connecticut.
RIDEM, 2004: Rhode Island Department of Environmental Management, DEM-DSR-01-93, February 2004.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Noncarcinogenic Chemicals

Cancer Inhalation Intake (Age 6 - 30) = 3.29E-01

Noncancer Inhalation Intake = 9.59E-01

Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 16) = 1.37E-01

Cancer Inhalation Intake (Age 16 - 30) = 1.92E-01

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 7.5.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Current/Future
 Receptor Population: Recreational User
 Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations					
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient	
							Value	Units	Value	Units		Value	Units	Value	Units		
Surface Soil	Surface Soil	Tank Farm 4	Ingestion	Benzo(a)anthracene	0.1	mg/kg	1.3E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	9.4E-08	2.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(a)pyrene	0.1	mg/kg	1.3E-07	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	9.4E-07	2.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(b)fluoranthene	0.2	mg/kg	1.7E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	1.2E-07	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(g,h,i)perylene	0.09	mg/kg	2.0E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.8E-07	3.0E-02	(mg/kg/day)	0.0000061		
				Benzo(k)fluoranthene	0.51	mg/kg	4.7E-07	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	3.4E-08	9.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Chrysene	6.90	mg/kg	6.3E-06	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	4.6E-08	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)	--	
				Dibenzo(a,h)anthracene	0.02	mg/kg	1.8E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	1.3E-07	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--	
				Fluoranthene	0.2	mg/kg	4.7E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	4.3E-07	4.0E-02	(mg/kg/day)	0.000011		
				Indeno(1,2,3-cd)pyrene	0.09	mg/kg	8.5E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	6.2E-08	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Pyrene	0.2	mg/kg	4.7E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	4.3E-07	3.0E-02	(mg/kg/day)	0.000014		
				2,3,7,8-TCDD Equivalents	3.1E-6	mg/kg	6.7E-13	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	8.7E-08	6.0E-12	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.0060	
				Arsenic	21.7	mg/kg	4.7E-06	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	7.0E-06	4.2E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.14	
				Beryllium	0.430	mg/kg	9.2E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	8.3E-07	2.0E-03	(mg/kg/day)	0.00042		
				Cobalt	13.3	mg/kg	2.9E-06	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.6E-05	3.0E-04	(mg/kg/day)	0.086		
				Iron	35,230	mg/kg	7.6E-03	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	6.8E-02	7.0E-01	(mg/kg/day)	0.098		
				Manganese (soil)	450	mg/kg	9.7E-05	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	8.7E-04	1.4E-01	(mg/kg/day)	0.0062		
				Exp. Route Total										8.5E-06			0.34
			Dermal	Benzo(a)anthracene	0.1	mg/kg	4.9E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	3.6E-08	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(a)pyrene	0.1	mg/kg	4.9E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	3.6E-07	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(b)fluoranthene	0.2	mg/kg	6.4E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	4.6E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(g,h,i)perylene	0.09	mg/kg	8.3E-09	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	6.9E-08	3.0E-02	(mg/kg/day)	0.0000023		
				Benzo(k)fluoranthene	0.51	mg/kg	1.8E-07	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	1.3E-08	3.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Chrysene	6.90	mg/kg	2.4E-06	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	1.8E-08	5.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--	
				Dibenzo(a,h)anthracene	0.02	mg/kg	7.1E-09	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	5.2E-08	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--	
				Fluoranthene	0.2	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.6E-07	4.0E-02	(mg/kg/day)	0.0000040		
				Indeno(1,2,3-cd)pyrene	0.09	mg/kg	3.2E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	2.4E-08	6.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--	
				Pyrene	0.2	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.6E-07	3.0E-02	(mg/kg/day)	0.0000054		
				2,3,7,8-TCDD Equivalents	3.1E-6	mg/kg	6.3E-14	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	8.2E-09	5.3E-13	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.00053	
				Arsenic	21.7	mg/kg	4.4E-07	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	6.6E-07	3.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.012	
				Beryllium	0.430	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	1.4E-05	(mg/kg/day)	--		
				Cobalt	13.3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	3.0E-04	(mg/kg/day)	--		
				Iron	35,230	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	7.0E-01	(mg/kg/day)	--		
				Manganese (soil)	450	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	5.6E-03	(mg/kg/day)	--		
Exp. Route Total										1.2E-06			0.013				
Exposure Point Total											9.7E-06			0.35			
Exposure Medium Total														0.35			

TABLE 7.5.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
 PAGE 12 OF 34

Scenario Timeframe: Current/Future
 Receptor Population: Recreational User
 Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Air	Tank Farm 4	Inhalation	Benzo(a)anthracene	1.3E-11	mg/m ³	6.1E-13	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	6.7E-14	1.1E-12	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(a)pyrene	1.3E-11	mg/m ³	6.1E-13	(mg/m ³)	1.1E-03	(ug/m ³) ⁻¹	6.7E-13	1.1E-12	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(b)fluoranthene	1.6E-11	mg/m ³	7.8E-13	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	8.6E-14	1.4E-12	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(g,h,i)perylene	8.5E-12	mg/m ³	1.6E-13	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	7.5E-13	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(k)fluoranthene	4.6E-11	mg/m ³	2.2E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	2.4E-13	4.1E-12	(mg/m ³)	NA	(mg/m ³)	--
				Chrysene	6.3E-10	mg/m ³	3.0E-11	(mg/m ³)	1.1E-05	(ug/m ³) ⁻¹	3.3E-13	5.5E-11	(mg/m ³)	NA	(mg/m ³)	--
				Dibenzo(a,h)anthracene	1.8E-12	mg/m ³	8.7E-14	(mg/m ³)	1.2E-03	(ug/m ³) ⁻¹	1.0E-13	1.6E-13	(mg/m ³)	NA	(mg/m ³)	--
				Fluoranthene	2.0E-11	mg/m ³	3.8E-13	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	1.8E-12	(mg/m ³)	NA	(mg/m ³)	--
				Indeno(1,2,3-cd)pyrene	8.4E-12	mg/m ³	4.0E-13	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	4.4E-14	7.3E-13	(mg/m ³)	NA	(mg/m ³)	--
				Pyrene	2.0E-11	mg/m ³	3.8E-13	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	1.8E-12	(mg/m ³)	NA	(mg/m ³)	--
				2,3,7,8-TCDD Equivalents	2.8E-16	mg/m ³	5.3E-18	(mg/m ³)	3.8E+01	(ug/m ³) ⁻¹	2.0E-13	2.5E-17	(mg/m ³)	4.0E-08	(mg/m ³)	6.17684E-10
				Arsenic	2.0E-9	mg/m ³	3.7E-11	(mg/m ³)	4.3E-03	(ug/m ³) ⁻¹	1.6E-10	1.7E-10	(mg/m ³)	1.5E-05	(mg/m ³)	0.000012
				Beryllium	3.9E-11	mg/m ³	7.3E-13	(mg/m ³)	2.4E-03	(ug/m ³) ⁻¹	1.8E-12	3.4E-12	(mg/m ³)	2.0E-05	(mg/m ³)	0.00000017
				Cobalt	1.2E-9	mg/m ³	2.3E-11	(mg/m ³)	9.0E-03	(ug/m ³) ⁻¹	2.0E-10	1.1E-10	(mg/m ³)	6.0E-06	(mg/m ³)	0.000018
				Iron	3.2E-6	mg/m ³	6.0E-08	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	2.8E-07	(mg/m ³)	NA	(mg/m ³)	--
Manganese (soil)	4.1E-8	mg/m ³	7.7E-10	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.6E-09	(mg/m ³)	5.0E-05	(mg/m ³)	0.00007				
Exp. Route Total										3.7E-10				0.00010		
Exposure Point Total										3.7E-10				0.00010		
Exposure Medium Total										3.7E-10				0.00010		
Medium Total										9.7E-06				0.35		
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 4	Ingestion	Benzo(a)anthracene	0.06	mg/kg	5.6E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	4.1E-08	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.06	mg/kg	5.3E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	3.9E-07	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.07	mg/kg	6.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	4.6E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	0.036	mg/kg	7.7E-09	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	7.0E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000023
				Benzo(k)fluoranthene	0.21	mg/kg	1.9E-07	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	1.4E-08	4.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.50	mg/kg	2.3E-06	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	1.7E-08	4.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.011	mg/kg	1.0E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	7.4E-08	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Fluoranthene	0.11	mg/kg	2.4E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.1E-07	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0000053
				Indeno(1,2,3-cd)pyrene	0.034	mg/kg	3.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	2.3E-08	6.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Pyrene	0.10	mg/kg	2.0E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.8E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000061
				Aroclor-1254	0.100	mg/kg	2.1E-08	(mg/kg/day)	2.0E+00	(mg/kg/day) ⁻¹	4.3E-08	1.9E-07	(mg/kg/day)	2.0E-05	(mg/kg/day)	0.0097
				2,3,7,8-TCDD Equivalents	2.7E-6	mg/kg	5.8E-13	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	7.5E-08	5.2E-12	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.0052
				Arsenic	19.5	mg/kg	4.2E-06	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	6.3E-06	3.8E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.13
				Beryllium	0.400	mg/kg	8.6E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	7.8E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.00039
				Cobalt	19.5	mg/kg	4.2E-06	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	3.8E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.13
Iron	42,012	mg/kg	9.0E-03	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	8.2E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.12				
Manganese (soil)	1,064	mg/kg	2.3E-04	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.1E-03	(mg/kg/day)	1.4E-01	(mg/kg/day)	0.015				
Thallium	1.90	mg/kg	4.1E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	3.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--				
Exp. Route Total										7.0E-06				0.40		

TABLE 7.5.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Current/Future
 Receptor Population: Recreational User
 Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations							
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient			
							Value	Units	Value	Units		Value	Units	Value	Units				
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 4	Dermal	Benzo(a)anthracene	0.06	mg/kg	2.2E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	1.6E-08	4.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--			
				Benzo(a)pyrene	0.06	mg/kg	2.0E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	1.5E-07	4.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--			
				Benzo(b)fluoranthene	0.07	mg/kg	2.4E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	1.8E-08	5.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--			
				Benzo(g,h,i)perylene	0.036	mg/kg	3.2E-09	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000009			
				Benzo(k)fluoranthene	0.21	mg/kg	7.4E-08	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	5.4E-09	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--			
				Chrysene	2.50	mg/kg	8.8E-07	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	6.4E-09	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--			
				Dibenzo(a,h)anthracene	0.011	mg/kg	3.9E-09	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	2.8E-08	8.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--			
				Fluoranthene	0.11	mg/kg	9.7E-09	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	8.1E-08	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.0000020			
				Indeno(1,2,3-cd)pyrene	0.034	mg/kg	1.2E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	8.8E-09	2.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--			
				Pyrene	0.10	mg/kg	8.4E-09	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	7.0E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000023			
				Aroclor-1254	0.100	mg/kg	9.5E-09	(mg/kg/day)	2.0E+00	(mg/kg/day) ⁻¹	1.9E-08	7.9E-08	(mg/kg/day)	2.0E-05	(mg/kg/day)	0.0040			
				2,3,7,8-TCDD Equivalents	2.7E-6	mg/kg	5.5E-14	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	7.1E-09	4.6E-13	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.00046			
				Arsenic	19.5	mg/kg	4.0E-07	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	5.9E-07	3.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.011			
				Beryllium	0.400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--			
				Cobalt	19.5	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--			
				Iron	42,012	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--			
				Manganese (soil)	1,064	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	5.6E-03	(mg/kg/day)	--			
				Thallium	1.90	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--			
							Exp. Route Total							8.5E-07					0.015
							Exposure Point Total							7.9E-06					0.41
			Exposure Medium Total							7.9E-06					0.41				
Air	Air	Tank Farm 4	Inhalation	Benzo(a)anthracene	5.5E-12	mg/m ³	2.6E-13	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	2.9E-14	4.9E-13	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(a)pyrene	5.3E-12	mg/m ³	2.5E-13	(mg/m ³)	1.1E-03	(ug/m ³) ⁻¹	2.8E-13	4.6E-13	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(b)fluoranthene	6.2E-12	mg/m ³	2.9E-13	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	3.2E-14	5.4E-13	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(g,h,i)perylene	3.3E-12	mg/m ³	6.1E-14	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	2.9E-13	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(k)fluoranthene	1.9E-11	mg/m ³	9.1E-13	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	1.0E-13	1.7E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Chrysene	2.3E-10	mg/m ³	1.1E-11	(mg/m ³)	1.1E-05	(ug/m ³) ⁻¹	1.2E-13	2.0E-11	(mg/m ³)	NA	(mg/m ³)	--			
				Dibenzo(a,h)anthracene	1.0E-12	mg/m ³	4.8E-14	(mg/m ³)	1.2E-03	(ug/m ³) ⁻¹	5.7E-14	8.8E-14	(mg/m ³)	NA	(mg/m ³)	--			
				Fluoranthene	1.0E-11	mg/m ³	1.9E-13	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	8.8E-13	(mg/m ³)	NA	(mg/m ³)	--			
				Indeno(1,2,3-cd)pyrene	3.1E-12	mg/m ³	1.5E-13	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	1.6E-14	2.7E-13	(mg/m ³)	NA	(mg/m ³)	--			
				Pyrene	8.6E-12	mg/m ³	1.6E-13	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	7.6E-13	(mg/m ³)	NA	(mg/m ³)	--			
				Aroclor-1254	9.1E-12	mg/m ³	1.7E-13	(mg/m ³)	5.7E-04	(ug/m ³) ⁻¹	9.7E-14	8.0E-13	(mg/m ³)	NA	(mg/m ³)	--			
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m ³	4.6E-18	(mg/m ³)	3.8E+01	(ug/m ³) ⁻¹	1.8E-13	2.2E-17	(mg/m ³)	4.0E-08	(mg/m ³)	5.37983E-10			
				Arsenic	1.8E-9	mg/m ³	3.3E-11	(mg/m ³)	4.3E-03	(ug/m ³) ⁻¹	1.4E-10	1.6E-10	(mg/m ³)	1.5E-05	(mg/m ³)	0.000010			
				Beryllium	3.6E-11	mg/m ³	6.8E-13	(mg/m ³)	2.4E-03	(ug/m ³) ⁻¹	1.6E-12	3.2E-12	(mg/m ³)	2.0E-05	(mg/m ³)	0.0000016			
				Cobalt	1.8E-9	mg/m ³	3.3E-11	(mg/m ³)	9.0E-03	(ug/m ³) ⁻¹	3.0E-10	1.6E-10	(mg/m ³)	6.0E-06	(mg/m ³)	0.00003			
				Iron	3.8E-6	mg/m ³	7.2E-08	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.3E-07	(mg/m ³)	NA	(mg/m ³)	--			
				Manganese (soil)	9.7E-8	mg/m ³	1.8E-09	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	8.5E-09	(mg/m ³)	5.0E-05	(mg/m ³)	0.00017			
Thallium	1.7E-10	mg/m ³	3.2E-12	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	1.5E-11	(mg/m ³)	NA	(mg/m ³)	--							
			Exp. Route Total							4.5E-10					0.0002				
			Exposure Point Total							4.5E-10					0.0002				

TABLE 7.5.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Current/Future
Receptor Population: Recreational User
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations					
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Exposure Medium Total									4.5E-10					0.0002	
Medium Total										7.9E-06					0.41	
Total of Receptor Risks - Surface Soil										9.7E-06	Total of Receptor Hazards - Surface Soil				0.3	
Total of Receptor Risks - Subsurface Soil										7.9E-06	Total of Receptor Hazards - Subsurface Soil				0.4	

Notes:

1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.6.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
 Receptor Population: Residents
 Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations										
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient						
							Value	Units	Value	Units		Value	Units	Value	Units							
Surface Soil	Surface Soil	Tank Farm 4	Ingestion	Benzo(a)anthracene	0.1	mg/kg	8.2E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	6.0E-07	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--						
				Benzo(a)pyrene	0.1	mg/kg	8.2E-07	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	6.0E-06	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--						
				Benzo(b)fluoranthene	0.2	mg/kg	1.1E-06	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	7.7E-07	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--						
				Benzo(g,h,i)perylene	0.09	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.2E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00004						
				Benzo(k)fluoranthene	0.51	mg/kg	3.0E-06	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	2.2E-07	6.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--						
				Chrysene	6.90	mg/kg	4.0E-05	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	2.9E-07	8.8E-05	(mg/kg/day)	NA	(mg/kg/day)	--						
				Dibenzo(a,h)anthracene	0.02	mg/kg	1.2E-07	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	8.5E-07	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--						
				Fluoranthene	0.2	mg/kg	2.4E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.8E-06	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.00007						
				Indeno(1,2,3-cd)pyrene	0.09	mg/kg	5.4E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	3.9E-07	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--						
				Pyrene	0.2	mg/kg	2.4E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.8E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00009						
				2,3,7,8-TCDD Equivalents	3.1E-6	mg/kg	3.4E-12	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	4.4E-07	4.0E-11	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.04						
				Arsenic	21.7	mg/kg	2.4E-05	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	3.6E-05	2.8E-04	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.9						
				Beryllium	0.430	mg/kg	4.7E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	5.5E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.003						
				Cobalt	13.3	mg/kg	1.5E-05	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.7E-04	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.6						
				Iron	35,230	mg/kg	3.9E-02	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	4.5E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.6						
				Manganese (soil)	450	mg/kg	4.9E-04	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	5.8E-03	(mg/kg/day)	1.4E-01	(mg/kg/day)	0.04						
				Exp. Route Total									4.5E-05				2.2					
				Dermal				Benzo(a)anthracene	0.1	mg/kg	3.0E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	2.2E-07	6.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--		
								Benzo(a)pyrene	0.1	mg/kg	3.0E-07	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	2.2E-06	6.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--		
								Benzo(b)fluoranthene	0.2	mg/kg	3.8E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	2.8E-07	8.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--		
								Benzo(g,h,i)perylene	0.09	mg/kg	3.7E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	4.4E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00001		
								Benzo(k)fluoranthene	0.51	mg/kg	1.1E-06	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	7.9E-08	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--		
								Chrysene	6.90	mg/kg	1.5E-05	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	1.1E-07	3.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--		
								Dibenzo(a,h)anthracene	0.02	mg/kg	4.3E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	3.1E-07	9.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--		
								Fluoranthene	0.2	mg/kg	8.8E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.0E-06	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.00003		
								Indeno(1,2,3-cd)pyrene	0.09	mg/kg	2.0E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	1.4E-07	4.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--		
								Pyrene	0.2	mg/kg	8.8E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.0E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00003		
								2,3,7,8-TCDD Equivalents	3.1E-6	mg/kg	2.9E-13	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	3.7E-08	3.3E-12	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.003		
								Arsenic	21.7	mg/kg	2.0E-06	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	3.0E-06	2.3E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.08		
								Beryllium	0.430	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--		
								Cobalt	13.3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--		
								Iron	35,230	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--		
								Manganese (soil)	450	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	5.6E-03	(mg/kg/day)	--		
								Exp. Route Total									6.3E-06				0.08	
								Exposure Point Total									5.2E-05				2.3	
								Exposure Medium Total									5.2E-05				2.3	

TABLE 7.6.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
 Receptor Population: Residents
 Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Air	Tank Farm 4	Inhalation	Benzo(a)anthracene	1.3E-11	mg/m ³	5.6E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	6.1E-13	1.2E-11	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(a)pyrene	1.3E-11	mg/m ³	5.6E-12	(mg/m ³)	1.1E-03	(ug/m ³) ⁻¹	6.1E-12	1.2E-11	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(b)fluoranthene	1.6E-11	mg/m ³	7.2E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	7.9E-13	1.6E-11	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(g,h,i)perylene	8.5E-12	mg/m ³	7.0E-13	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	8.2E-12	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(k)fluoranthene	4.6E-11	mg/m ³	2.0E-11	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	2.2E-12	4.4E-11	(mg/m ³)	NA	(mg/m ³)	--
				Chrysene	6.3E-10	mg/m ³	2.7E-10	(mg/m ³)	1.1E-05	(ug/m ³) ⁻¹	3.0E-12	6.0E-10	(mg/m ³)	NA	(mg/m ³)	--
				Dibenzo(a,h)anthracene	1.8E-12	mg/m ³	8.0E-13	(mg/m ³)	1.2E-03	(ug/m ³) ⁻¹	9.6E-13	1.7E-12	(mg/m ³)	NA	(mg/m ³)	--
				Fluoranthene	2.0E-11	mg/m ³	1.6E-12	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	1.9E-11	(mg/m ³)	NA	(mg/m ³)	--
				Indeno(1,2,3-cd)pyrene	8.4E-12	mg/m ³	3.7E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	4.0E-13	8.0E-12	(mg/m ³)	NA	(mg/m ³)	--
				Pyrene	2.0E-11	mg/m ³	1.6E-12	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	1.9E-11	(mg/m ³)	NA	(mg/m ³)	--
				2,3,7,8-TCDD Equivalents	2.8E-16	mg/m ³	2.3E-17	(mg/m ³)	3.8E+01	(ug/m ³) ⁻¹	8.8E-13	2.7E-16	(mg/m ³)	4.0E-08	(mg/m ³)	6.75592E-09
				Arsenic	2.0E-9	mg/m ³	1.6E-10	(mg/m ³)	4.3E-03	(ug/m ³) ⁻¹	7.0E-10	1.9E-09	(mg/m ³)	1.5E-05	(mg/m ³)	0.0001
				Beryllium	3.9E-11	mg/m ³	3.2E-12	(mg/m ³)	2.4E-03	(ug/m ³) ⁻¹	7.7E-12	3.7E-11	(mg/m ³)	2.0E-05	(mg/m ³)	0.000002
				Cobalt	1.2E-9	mg/m ³	9.9E-11	(mg/m ³)	9.0E-03	(ug/m ³) ⁻¹	8.9E-10	1.2E-09	(mg/m ³)	6.0E-06	(mg/m ³)	0.0002
				Iron	3.2E-6	mg/m ³	2.6E-07	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.1E-06	(mg/m ³)	NA	(mg/m ³)	--
				Manganese (soil)	4.1E-8	mg/m ³	3.4E-09	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.9E-08	(mg/m ³)	5.0E-05	(mg/m ³)	0.0008
				Exp. Route Total										1.6E-09		
Exposure Point Total										1.6E-09				0.001		
Exposure Medium Total										1.6E-09				0.001		
Medium Total										5.2E-05				2.3		
Subsurface Soil	Subsurface Soil	Tank Farm 4	Ingestion	Benzo(a)anthracene	0.06	mg/kg	3.6E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	2.6E-07	7.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.06	mg/kg	3.4E-07	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	2.5E-06	7.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.07	mg/kg	4.0E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	2.9E-07	8.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	0.036	mg/kg	3.9E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	4.6E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00002
				Benzo(k)fluoranthene	0.21	mg/kg	1.2E-06	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	9.0E-08	2.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.50	mg/kg	1.5E-05	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	1.1E-07	3.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.011	mg/kg	6.4E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	4.7E-07	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Fluoranthene	0.11	mg/kg	1.2E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.4E-06	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.00004
				Indeno(1,2,3-cd)pyrene	0.034	mg/kg	2.0E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	1.5E-07	4.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Pyrene	0.10	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.2E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00004
				Aroclor-1254	0.100	mg/kg	1.1E-07	(mg/kg/day)	2.0E+00	(mg/kg/day) ⁻¹	2.2E-07	1.3E-06	(mg/kg/day)	2.0E-05	(mg/kg/day)	0.06
				2,3,7,8-TCDD Equivalents	2.7E-6	mg/kg	3.0E-12	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	3.8E-07	3.5E-11	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.03
				Arsenic	19.5	mg/kg	2.1E-05	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	3.2E-05	2.5E-04	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.8
				Beryllium	0.400	mg/kg	4.4E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	5.1E-06	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.003
				Cobalt	19.5	mg/kg	2.1E-05	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.5E-04	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.8
				Iron	42,012	mg/kg	4.6E-02	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	5.4E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.8
				Manganese (soil)	1,064	mg/kg	1.2E-03	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.4E-02	(mg/kg/day)	1.4E-01	(mg/kg/day)	0.10
Thallium	1.90	mg/kg	2.1E-06	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--				
Exp. Route Total										3.6E-05				2.6		

TABLE 7.6.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
 Receptor Population: Residents
 Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations							
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient			
							Value	Units	Value	Units		Value	Units	Value	Units				
Subsurface Soil	Subsurface Soil	Tank Farm 4	Dermal	Benzo(a)anthracene	0.06	mg/kg	1.3E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	9.5E-08	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--			
				Benzo(a)pyrene	0.06	mg/kg	1.2E-07	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	9.0E-07	2.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--			
				Benzo(b)fluoranthene	0.07	mg/kg	1.4E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	1.1E-07	3.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--			
				Benzo(g,h,i)perylene	0.036	mg/kg	1.4E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000006			
				Benzo(k)fluoranthene	0.21	mg/kg	4.5E-07	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	3.3E-08	9.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--			
				Chrysene	2.50	mg/kg	5.3E-06	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	3.9E-08	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--			
				Dibenzo(a,h)anthracene	0.011	mg/kg	2.3E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	1.7E-07	5.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--			
				Fluoranthene	0.11	mg/kg	4.4E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	5.1E-07	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.00001			
				Indeno(1,2,3-cd)pyrene	0.034	mg/kg	7.2E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	5.3E-08	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--			
				Pyrene	0.10	mg/kg	3.8E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	4.4E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00001			
				Aroclor-1254	0.100	mg/kg	4.3E-08	(mg/kg/day)	2.0E+00	(mg/kg/day) ⁻¹	8.6E-08	5.0E-07	(mg/kg/day)	2.0E-05	(mg/kg/day)	0.03			
				2,3,7,8-TCDD Equivalents	2.7E-6	mg/kg	2.5E-13	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	3.2E-08	2.9E-12	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.003			
				Arsenic	19.5	mg/kg	1.8E-06	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	2.7E-06	2.1E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.07			
				Beryllium	0.400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--			
				Cobalt	19.5	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--			
				Iron	42,012	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--			
				Manganese (soil)	1,064	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	5.6E-03	(mg/kg/day)	--			
				Thallium	1.90	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--			
							Exp. Route Total							4.2E-06					0.10
							Exposure Point Total							4.1E-05					2.7
			Exposure Medium Total							4.1E-05					2.7				
Air	Air	Tank Farm 4	Inhalation	Benzo(a)anthracene	5.5E-12	mg/m ³	2.4E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	2.7E-13	5.3E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(a)pyrene	5.3E-12	mg/m ³	2.3E-12	(mg/m ³)	1.1E-03	(ug/m ³) ⁻¹	2.5E-12	5.1E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(b)fluoranthene	6.2E-12	mg/m ³	2.7E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	3.0E-13	5.9E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(g,h,i)perylene	3.3E-12	mg/m ³	2.7E-13	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.1E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(k)fluoranthene	1.9E-11	mg/m ³	8.4E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	9.2E-13	1.8E-11	(mg/m ³)	NA	(mg/m ³)	--			
				Chrysene	2.3E-10	mg/m ³	1.0E-10	(mg/m ³)	1.1E-05	(ug/m ³) ⁻¹	1.1E-12	2.2E-10	(mg/m ³)	NA	(mg/m ³)	--			
				Dibenzo(a,h)anthracene	1.0E-12	mg/m ³	4.4E-13	(mg/m ³)	1.2E-03	(ug/m ³) ⁻¹	5.3E-13	9.6E-13	(mg/m ³)	NA	(mg/m ³)	--			
				Fluoranthene	1.0E-11	mg/m ³	8.2E-13	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	9.6E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Indeno(1,2,3-cd)pyrene	3.1E-12	mg/m ³	1.4E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	1.5E-13	3.0E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Pyrene	8.6E-12	mg/m ³	7.1E-13	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	8.3E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Aroclor-1254	9.1E-12	mg/m ³	7.5E-13	(mg/m ³)	5.7E-04	(ug/m ³) ⁻¹	4.3E-13	8.7E-12	(mg/m ³)	NA	(mg/m ³)	--			
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m ³	2.0E-17	(mg/m ³)	3.8E+01	(ug/m ³) ⁻¹	7.7E-13	2.4E-16	(mg/m ³)	4.0E-08	(mg/m ³)	5.88418E-09			
				Arsenic	1.8E-9	mg/m ³	1.5E-10	(mg/m ³)	4.3E-03	(ug/m ³) ⁻¹	6.3E-10	1.7E-09	(mg/m ³)	1.5E-05	(mg/m ³)	0.0001			
				Beryllium	3.6E-11	mg/m ³	3.0E-12	(mg/m ³)	2.4E-03	(ug/m ³) ⁻¹	7.2E-12	3.5E-11	(mg/m ³)	2.0E-05	(mg/m ³)	0.000002			
				Cobalt	1.8E-9	mg/m ³	1.5E-10	(mg/m ³)	9.0E-03	(ug/m ³) ⁻¹	1.3E-09	1.7E-09	(mg/m ³)	6.0E-06	(mg/m ³)	0.0003			
				Iron	3.8E-6	mg/m ³	3.1E-07	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.7E-06	(mg/m ³)	NA	(mg/m ³)	--			
				Manganese (soil)	9.7E-8	mg/m ³	8.0E-09	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	9.3E-08	(mg/m ³)	5.0E-05	(mg/m ³)	0.002			
				Thallium	1.7E-10	mg/m ³	1.4E-11	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	1.7E-10	(mg/m ³)	NA	(mg/m ³)	--			
							Exp. Route Total							2.0E-09					0.002
							Exposure Point Total							2.0E-09					0.002

TABLE 7.6.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations					
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Exposure Medium Total									2.0E-09				0.002		
Medium Total										4.1E-05				2.7		
										Total of Receptor Risks - Surface Soil	5.2E-05			Total of Receptor Hazards - Surface Soil	2.3	
										Total of Receptor Risks - Subsurface Soil	4.1E-05			Total of Receptor Hazards - Subsurface Soil	2.7	

Notes:

1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.7.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
 Receptor Population: Residents
 Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations					
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient	
							Value	Units	Value	Units		Value	Units	Value	Units		
Surface Soil	Surface Soil	Tank Farm 4	Ingestion	Benzo(a)anthracene	0.1	mg/kg	1.2E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	8.8E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(a)pyrene	0.1	mg/kg	1.2E-07	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	8.8E-07	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(b)fluoranthene	0.2	mg/kg	1.5E-07	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	1.1E-07	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(g,h,i)perylene	0.09	mg/kg	4.4E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.3E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004	
				Benzo(k)fluoranthene	0.51	mg/kg	4.4E-07	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	3.2E-08	7.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Chrysene	6.90	mg/kg	5.9E-06	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	4.3E-08	9.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--	
				Dibenzo(a,h)anthracene	0.02	mg/kg	1.7E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	1.3E-07	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--	
				Fluoranthene	0.2	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	3.0E-07	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.000008	
				Indeno(1,2,3-cd)pyrene	0.09	mg/kg	7.9E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	5.8E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Pyrene	0.2	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	3.0E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00001	
				2,3,7,8-TCDD Equivalents	3.1E-6	mg/kg	1.5E-12	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	1.9E-07	4.2E-12	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.004	
				Arsenic	21.7	mg/kg	1.0E-05	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	1.5E-05	3.0E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.10	
				Beryllium	0.430	mg/kg	2.0E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	5.9E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003	
				Cobalt	13.3	mg/kg	6.2E-06	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.8E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.06	
				Iron	35,230	mg/kg	1.7E-02	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	4.8E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.07	
				Manganese (soil)	450	mg/kg	2.1E-04	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	6.2E-04	(mg/kg/day)	1.4E-01	(mg/kg/day)	0.004	
			Exp. Route Total								1.7E-05						0.2
			Dermal	Benzo(a)anthracene	0.1	mg/kg	6.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	4.6E-08	9.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(a)pyrene	0.1	mg/kg	6.3E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	4.6E-07	9.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(b)fluoranthene	0.2	mg/kg	8.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	5.9E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Benzo(g,h,i)perylene	0.09	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	6.7E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002	
				Benzo(k)fluoranthene	0.51	mg/kg	2.3E-07	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	1.7E-08	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--	
				Chrysene	6.90	mg/kg	3.1E-06	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	2.2E-08	4.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--	
				Dibenzo(a,h)anthracene	0.02	mg/kg	8.9E-09	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	6.5E-08	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--	
				Fluoranthene	0.2	mg/kg	5.4E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.6E-07	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.000004	
				Indeno(1,2,3-cd)pyrene	0.09	mg/kg	4.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	3.0E-08	6.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--	
				Pyrene	0.2	mg/kg	5.4E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.6E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000005	
				2,3,7,8-TCDD Equivalents	3.1E-6	mg/kg	1.7E-13	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	2.3E-08	5.1E-13	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.0005	
				Arsenic	21.7	mg/kg	1.2E-06	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	1.8E-06	3.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01	
Beryllium	0.430	mg/kg		0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--				
Cobalt	13.3	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--					
Iron	35,230	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--					
Manganese (soil)	450	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	5.6E-03	(mg/kg/day)	--					
Exp. Route Total								2.5E-06						0.01			
Exposure Point Total								1.9E-05						0.3			
Exposure Medium Total								1.9E-05						0.3			

TABLE 7.7.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
 Receptor Population: Residents
 Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Air	Tank Farm 4	Inhalation	Benzo(a)anthracene	1.3E-11	mg/m ³	7.7E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	8.4E-13	1.2E-11	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(a)pyrene	1.3E-11	mg/m ³	7.7E-12	(mg/m ³)	1.1E-03	(ug/m ³) ⁻¹	8.4E-12	1.2E-11	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(b)fluoranthene	1.6E-11	mg/m ³	9.9E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	1.1E-12	1.6E-11	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(g,h,i)perylene	8.5E-12	mg/m ³	2.8E-12	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	8.2E-12	(mg/m ³)	NA	(mg/m ³)	--
				Benzo(k)fluoranthene	4.6E-11	mg/m ³	2.8E-11	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	3.1E-12	4.4E-11	(mg/m ³)	NA	(mg/m ³)	--
				Chrysene	6.3E-10	mg/m ³	3.8E-10	(mg/m ³)	1.1E-05	(ug/m ³) ⁻¹	4.2E-12	6.0E-10	(mg/m ³)	NA	(mg/m ³)	--
				Dibenzo(a,h)anthracene	1.8E-12	mg/m ³	1.1E-12	(mg/m ³)	1.2E-03	(ug/m ³) ⁻¹	1.3E-12	1.7E-12	(mg/m ³)	NA	(mg/m ³)	--
				Fluoranthene	2.0E-11	mg/m ³	6.6E-12	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	1.9E-11	(mg/m ³)	NA	(mg/m ³)	--
				Indeno(1,2,3-cd)pyrene	8.4E-12	mg/m ³	5.0E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	5.5E-13	8.0E-12	(mg/m ³)	NA	(mg/m ³)	--
				Pyrene	2.0E-11	mg/m ³	6.6E-12	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	1.9E-11	(mg/m ³)	NA	(mg/m ³)	--
				2,3,7,8-TCDD Equivalents	2.8E-16	mg/m ³	9.3E-17	(mg/m ³)	3.8E+01	(ug/m ³) ⁻¹	3.5E-12	2.7E-16	(mg/m ³)	4.0E-08	(mg/m ³)	6.75592E-09
				Arsenic	2.0E-9	mg/m ³	6.5E-10	(mg/m ³)	4.3E-03	(ug/m ³) ⁻¹	2.8E-09	1.9E-09	(mg/m ³)	1.5E-05	(mg/m ³)	0.0001
				Beryllium	3.9E-11	mg/m ³	1.3E-11	(mg/m ³)	2.4E-03	(ug/m ³) ⁻¹	3.7E-11	3.7E-11	(mg/m ³)	2.0E-05	(mg/m ³)	0.000002
				Cobalt	1.2E-9	mg/m ³	4.0E-10	(mg/m ³)	9.0E-03	(ug/m ³) ⁻¹	3.6E-09	1.2E-09	(mg/m ³)	6.0E-06	(mg/m ³)	0.0002
				Iron	3.2E-6	mg/m ³	1.1E-06	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.1E-06	(mg/m ³)	NA	(mg/m ³)	--
				Manganese (soil)	4.1E-8	mg/m ³	1.3E-08	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.9E-08	(mg/m ³)	5.0E-05	(mg/m ³)	0.0008
				Exp. Route Total										6.4E-09		
Exposure Point Total										6.4E-09				0.001		
Exposure Medium Total										6.4E-09				0.001		
Medium Total										1.9E-05				0.3		
Subsurface Soil	Subsurface Soil	Tank Farm 4	Ingestion	Benzo(a)anthracene	0.06	mg/kg	5.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	3.8E-08	8.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.06	mg/kg	5.0E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	3.6E-07	7.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.07	mg/kg	5.9E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	4.3E-08	9.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	0.036	mg/kg	1.7E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	4.9E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	0.21	mg/kg	1.8E-07	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	1.3E-08	2.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.50	mg/kg	2.2E-06	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	1.6E-08	3.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.011	mg/kg	9.5E-09	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	6.9E-08	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Fluoranthene	0.11	mg/kg	5.2E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.5E-07	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.000004
				Indeno(1,2,3-cd)pyrene	0.034	mg/kg	2.9E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	2.1E-08	4.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Pyrene	0.10	mg/kg	4.5E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.3E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				Aroclor-1254	0.100	mg/kg	4.7E-08	(mg/kg/day)	2.0E+00	(mg/kg/day) ⁻¹	9.4E-08	1.4E-07	(mg/kg/day)	2.0E-05	(mg/kg/day)	0.007
				2,3,7,8-TCDD Equivalents	2.7E-6	mg/kg	1.3E-12	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	1.6E-07	3.7E-12	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.004
				Arsenic	19.5	mg/kg	9.2E-06	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	1.4E-05	2.7E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.09
				Beryllium	0.400	mg/kg	1.9E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	5.5E-07	(mg/kg/day)	2.0E-03	(mg/kg/day)	0.0003
				Cobalt	19.5	mg/kg	9.2E-06	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.7E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.09
				Iron	42,012	mg/kg	2.0E-02	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	5.8E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.08
				Manganese (soil)	1,064	mg/kg	5.0E-04	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	1.5E-03	(mg/kg/day)	1.4E-01	(mg/kg/day)	0.01
Thallium	1.90	mg/kg	8.9E-07	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--				
Exp. Route Total										1.5E-05				0.3		

TABLE 7.7.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
 Receptor Population: Residents
 Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations							
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient			
							Value	Units	Value	Units		Value	Units	Value	Units				
Subsurface Soil	Subsurface Soil	Tank Farm 4	Dermal	Benzo(a)anthracene	0.06	mg/kg	2.7E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	2.0E-08	4.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--			
				Benzo(a)pyrene	0.06	mg/kg	2.6E-08	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	1.9E-07	4.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--			
				Benzo(b)fluoranthene	0.07	mg/kg	3.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	2.2E-08	4.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--			
				Benzo(g,h,i)perylene	0.036	mg/kg	8.8E-09	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	2.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0000009			
				Benzo(k)fluoranthene	0.21	mg/kg	9.4E-08	(mg/kg/day)	7.3E-02	(mg/kg/day) ⁻¹	6.8E-09	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--			
				Chrysene	2.50	mg/kg	1.1E-06	(mg/kg/day)	7.3E-03	(mg/kg/day) ⁻¹	8.2E-09	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--			
				Dibenzo(a,h)anthracene	0.011	mg/kg	4.9E-09	(mg/kg/day)	7.3E+00	(mg/kg/day) ⁻¹	3.6E-08	7.8E-09	(mg/kg/day)	NA	(mg/kg/day)	--			
				Fluoranthene	0.11	mg/kg	2.7E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	7.8E-08	(mg/kg/day)	4.0E-02	(mg/kg/day)	0.000002			
				Indeno(1,2,3-cd)pyrene	0.034	mg/kg	1.5E-08	(mg/kg/day)	7.3E-01	(mg/kg/day) ⁻¹	1.1E-08	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--			
				Pyrene	0.10	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	6.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002			
				Aroclor-1254	0.100	mg/kg	2.6E-08	(mg/kg/day)	2.0E+00	(mg/kg/day) ⁻¹	5.2E-08	7.7E-08	(mg/kg/day)	2.0E-05	(mg/kg/day)	0.004			
				2,3,7,8-TCDD Equivalents	2.7E-6	mg/kg	1.5E-13	(mg/kg/day)	1.3E+05	(mg/kg/day) ⁻¹	2.0E-08	4.4E-13	(mg/kg/day)	1.0E-09	(mg/kg/day)	0.0004			
				Arsenic	19.5	mg/kg	1.1E-06	(mg/kg/day)	1.5E+00	(mg/kg/day) ⁻¹	1.6E-06	3.2E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01			
				Beryllium	0.400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	1.4E-05	(mg/kg/day)	--			
				Cobalt	19.5	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--			
				Iron	42,012	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--			
				Manganese (soil)	1,064	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	5.6E-03	(mg/kg/day)	--			
				Thallium	1.90	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day) ⁻¹	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--			
							Exp. Route Total							2.0E-06					0.01
							Exposure Point Total							1.7E-05					0.3
			Exposure Medium Total							1.7E-05					0.3				
Air	Air	Tank Farm 4	Inhalation	Benzo(a)anthracene	5.5E-12	mg/m ³	3.3E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	3.7E-13	5.3E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(a)pyrene	5.3E-12	mg/m ³	3.2E-12	(mg/m ³)	1.1E-03	(ug/m ³) ⁻¹	3.5E-12	5.1E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(b)fluoranthene	6.2E-12	mg/m ³	3.7E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	4.1E-13	5.9E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(g,h,i)perylene	3.3E-12	mg/m ³	1.1E-12	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.1E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Benzo(k)fluoranthene	1.9E-11	mg/m ³	1.2E-11	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	1.3E-12	1.8E-11	(mg/m ³)	NA	(mg/m ³)	--			
				Chrysene	2.3E-10	mg/m ³	1.4E-10	(mg/m ³)	1.1E-05	(ug/m ³) ⁻¹	1.5E-12	2.2E-10	(mg/m ³)	NA	(mg/m ³)	--			
				Dibenzo(a,h)anthracene	1.0E-12	mg/m ³	6.0E-13	(mg/m ³)	1.2E-03	(ug/m ³) ⁻¹	7.2E-13	9.6E-13	(mg/m ³)	NA	(mg/m ³)	--			
				Fluoranthene	1.0E-11	mg/m ³	3.3E-12	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	9.6E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Indeno(1,2,3-cd)pyrene	3.1E-12	mg/m ³	1.9E-12	(mg/m ³)	1.1E-04	(ug/m ³) ⁻¹	2.0E-13	3.0E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Pyrene	8.6E-12	mg/m ³	2.8E-12	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	8.3E-12	(mg/m ³)	NA	(mg/m ³)	--			
				Aroclor-1254	9.1E-12	mg/m ³	3.0E-12	(mg/m ³)	5.7E-04	(ug/m ³) ⁻¹	1.7E-12	8.7E-12	(mg/m ³)	NA	(mg/m ³)	--			
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m ³	8.1E-17	(mg/m ³)	3.8E+01	(ug/m ³) ⁻¹	3.1E-12	2.4E-16	(mg/m ³)	4.0E-08	(mg/m ³)	5.88418E-09			
				Arsenic	1.8E-9	mg/m ³	5.8E-10	(mg/m ³)	4.3E-03	(ug/m ³) ⁻¹	2.5E-09	1.7E-09	(mg/m ³)	1.5E-05	(mg/m ³)	0.0001			
				Beryllium	3.6E-11	mg/m ³	1.2E-11	(mg/m ³)	2.4E-03	(ug/m ³) ⁻¹	2.9E-11	3.5E-11	(mg/m ³)	2.0E-05	(mg/m ³)	0.000002			
				Cobalt	1.8E-9	mg/m ³	5.8E-10	(mg/m ³)	9.0E-03	(ug/m ³) ⁻¹	5.2E-09	1.7E-09	(mg/m ³)	6.0E-06	(mg/m ³)	0.0003			
				Iron	3.8E-6	mg/m ³	1.3E-06	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	3.7E-06	(mg/m ³)	NA	(mg/m ³)	--			
				Manganese (soil)	9.7E-8	mg/m ³	3.2E-08	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	9.3E-08	(mg/m ³)	5.0E-05	(mg/m ³)	0.002			
				Thallium	1.7E-10	mg/m ³	5.7E-11	(mg/m ³)	NA	(ug/m ³) ⁻¹	--	1.7E-10	(mg/m ³)	NA	(mg/m ³)	--			
							Exp. Route Total							7.8E-09					0.002
							Exposure Point Total							7.8E-09					0.002

TABLE 7.7.RME
 CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
 REASONABLE MAXIMUM EXPOSURES
 NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient	
							Value	Units		Value	Units	Value	Units		
	Exposure Medium Total									7.8E-09					0.002
Medium Total										1.7E-05					0.3
Total of Receptor Risks - Surface Soil										1.9E-05	Total of Receptor Hazards - Surface Soil				0.3
Total of Receptor Risks - Subsurface Soil										1.7E-05	Total of Receptor Hazards - Subsurface Soil				0.3

Notes:

1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Current/Future
Receptor Population: Recreational User
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient						
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total							
Surface Soil	Surface Soil	Tank Farm 4	Benzo(a)anthracene	9E-08	--	4E-08	--	1E-07							
			Benzo(a)pyrene	1E-06	--	4E-07	--	1E-06							
			Benzo(b)fluoranthene	1E-07	--	5E-08	--	2E-07							
			Benzo(g,h,i)perylene	--	--	--	--	--							
			Benzo(k)fluoranthene	1E-08	--	4E-09	--	1E-08							
			Chrysene	1E-09	--	4E-10	--	2E-09							
			Dibenzo(a,h)anthracene	1E-07	--	5E-08	--	2E-07							
			Fluoranthene	--	--	--	--	--							
			Indeno(1,2,3-cd)pyrene	6E-08	--	2E-08	--	8E-08							
			Pyrene	--	--	--	--	--							
			2,3,7,8-TCDD Equivalents	9E-08	--	8E-09	--	9E-08							
			Arsenic	7E-06	--	7E-07	--	8E-06							
			Beryllium	--	--	--	--	--							
			Cobalt	--	--	--	--	--							
			Iron	--	--	--	--	--							
			Manganese (soil)	--	--	--	--	--							
						Chemical Total	9E-06	--	1E-06	--	1E-05				
		Exposure Point Total						1E-05							
	Exposure Medium Total							1E-05							
Air	Air	Tank Farm 4	Benzo(a)anthracene	--	7E-14	--	--	7E-14							
			Benzo(a)pyrene	--	7E-13	--	--	7E-13							
			Benzo(b)fluoranthene	--	9E-14	--	--	9E-14							
			Benzo(g,h,i)perylene	--	--	--	--	--							
			Benzo(k)fluoranthene	--	8E-14	--	--	8E-14							
			Chrysene	--	8E-15	--	--	8E-15							
			Dibenzo(a,h)anthracene	--	1E-13	--	--	1E-13							
			Fluoranthene	--	--	--	--	--							
			Indeno(1,2,3-cd)pyrene	--	4E-14	--	--	4E-14							
			Pyrene	--	--	--	--	--							
			2,3,7,8-TCDD Equivalents	--	2E-13	--	--	2E-13							
			Arsenic	--	2E-10	--	--	2E-10							
			Beryllium	--	2E-12	--	--	2E-12							
			Cobalt	--	2E-10	--	--	2E-10							
			Iron	--	--	--	--	--							
			Manganese (soil)	--	--	--	--	--							
						Chemical Total	--	4E-10	--	--	4E-10				

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Current/Future
Receptor Population: Recreational User
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total						
		Exposure Point Total						4E-10						
		Exposure Medium Total						4E-10						
Medium Total														
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 4	Benzo(a)anthracene	4E-08	--	1E-08	--	5E-08						
			Benzo(a)pyrene	4E-07	--	2E-07	--	6E-07						
			Benzo(b)fluoranthene	4E-08	--	2E-08	--	6E-08						
			Benzo(g,h,i)perylene	--	--	--	--	--						
			Benzo(k)fluoranthene	3E-09	--	1E-09	--	4E-09						
			Chrysene	4E-10	--	2E-10	--	6E-10						
			Dibenzo(a,h)anthracene	7E-08	--	3E-08	--	1E-07						
			Fluoranthene	--	--	--	--	--						
			Indeno(1,2,3-cd)pyrene	2E-08	--	7E-09	--	3E-08						
			Pyrene	--	--	--	--	--						
			Aroclor-1254	4E-08	--	2E-08	--	6E-08						
			2,3,7,8-TCDD Equivalents	8E-08	--	7E-09	--	8E-08						
			Arsenic	6E-06	--	6E-07	--	7E-06						
			Beryllium	--	--	--	--	--						
			Cobalt	--	--	--	--	--						
			Iron	--	--	--	--	--						
			Manganese (soil)	--	--	--	--	--						
Thallium	--	--	--	--	--									
		Chemical Total	7E-06	--	8E-07	--	8E-06							
		Exposure Point Total					8E-06							
		Exposure Medium Total					8E-06							
Air	Air	Tank Farm 4	Benzo(a)anthracene	--	3E-14	--	--	3E-14						
			Benzo(a)pyrene	--	3E-13	--	--	3E-13						
			Benzo(b)fluoranthene	--	3E-14	--	--	3E-14						
			Benzo(g,h,i)perylene	--	--	--	--	--						
			Benzo(k)fluoranthene	--	2E-14	--	--	2E-14						
			Chrysene	--	3E-15	--	--	3E-15						
			Dibenzo(a,h)anthracene	--	6E-14	--	--	6E-14						
			Fluoranthene	--	--	--	--	--						
			Indeno(1,2,3-cd)pyrene	--	1E-14	--	--	1E-14						

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Current/Future
Receptor Population: Recreational User
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total					
			Pyrene	--	--	--	--	--					
			Aroclor-1254	--	1E-13	--	--	1E-13					
			2,3,7,8-TCDD Equivalents	--	2E-13	--	--	2E-13					
			Arsenic	--	1E-10	--	--	1E-10					
			Beryllium	--	2E-12	--	--	2E-12					
Surface/Subsurface Soil	Air	Tank Farm 4	Cobalt	--	3E-10	--	--	3E-10					
			Iron	--	--	--	--	--					
			Manganese (soil)	--	--	--	--	--					
			Thallium	--	--	--	--	--					
			Chemical Total	--	4E-10	--	--	4E-10					
		Exposure Point Total					4E-10						
		Exposure Medium Total					4E-10						
Medium Total								8E-06					
Surface Water	Surface Water	Tank Farm 4	Benzo(a)anthracene	--	--	--	--	--					
			Arsenic	--	--	4E-09	--	4E-09					
			Iron	--	--	--	--	--					
			Chemical Total	--	--	4E-09	--	4E-09					
		Exposure Point Total					4E-09						
		Exposure Medium Total					4E-09						
Medium Total								4E-09					
Sediment	Sediment	Tank Farm 4	Benzo(a)anthracene	7E-09	--	3E-09	--	9E-09					
			Benzo(a)pyrene	7E-07	--	3E-07	--	1E-06					
			Benzo(b)fluoranthene	9E-08	--	3E-08	--	1E-07					
			Dibenzo(a,h)anthracene	2E-07	--	7E-08	--	3E-07					
			2,3,7,8-TCDD Equivalents	1E-07	--	1E-08	--	1E-07					
			Aluminum	--	--	--	--	--					
			Arsenic	7E-06	--	7E-07	--	8E-06					
			Beryllium	--	--	--	--	--					
			Chromium	2E-06	--	--	--	2E-06					
			Cobalt	--	--	--	--	--					
			Iron	--	--	--	--	--					
			Manganese (soil)	--	--	--	--	--					
			Thallium	--	--	--	--	--					

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Current/Future
Receptor Population: Recreational User
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total					
			Chemical Total	1E-05	--	1E-06	--	1E-05					
		Exposure Point Total						1E-05					
		Exposure Medium Total						1E-05					
Medium Total								1E-05					
Receptor Total				Receptor Risk Total (Surface Soil, Surface Water, and Sediment)					2E-05				
Receptor Total				Receptor Risk Total (Subsurface Soil, Surface Water, and Sediment)					2E-05				

Notes:

1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 27 OF 35

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 4	Benzo(a)anthracene	6E-07	--	2E-07	--	8E-07	NA	--	--	--	--
			Benzo(a)pyrene	6E-06	--	2E-06	--	8E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	8E-07	--	3E-07	--	1E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	--	--	--	--	Kidney	0.00004	--	0.00001	0.00005
			Benzo(k)fluoranthene	2E-07	--	8E-08	--	3E-07	NA	--	--	--	--
			Chrysene	3E-07	--	1E-07	--	4E-07	NA	--	--	--	--
			Dibenzo(a,h)anthracene	9E-07	--	3E-07	--	1E-06	NA	--	--	--	--
			Fluoranthene	--	--	--	--	--	Liver	0.00007	--	0.00003	0.00010
			Indeno(1,2,3-cd)pyrene	4E-07	--	1E-07	--	5E-07	NA	--	--	--	--
			Pyrene	--	--	--	--	--	Kidney	0.00009	--	0.00003	0.0001
			2,3,7,8-TCDD Equivalents	4E-07	--	4E-08	--	5E-07	Developmental	0.04	--	0.003	0.04
			Arsenic	4E-05	--	3E-06	--	4E-05	Skin, CVS	0.9	--	0.08	1
			Beryllium	--	--	--	--	--	GS	0.003	--	--	0.003
			Cobalt	--	--	--	--	--	Blood	0.6	--	--	0.6
			Iron	--	--	--	--	--	GS	0.6	--	--	0.6
			Manganese (soil)	--	--	--	--	--	CNS	0.04	--	--	0.04
						Chemical Total	5E-05	--	6E-06	--	5E-05		2
			Exposure Point Total					5E-05					2
			Exposure Medium Total					5E-05					2
Air	Air	Tank Farm 4	Benzo(a)anthracene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	8E-12	--	--	6E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	8E-13	--	--	8E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	--	--	--	--	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Chrysene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Fluoranthene	--	--	--	--	--	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Pyrene	--	--	--	--	--	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	9E-13	--	--	9E-13	Liver, Respiratory, Developmental	--	7E-09	--	7E-09
			Arsenic	--	7E-10	--	--	7E-10	NA	--	0.0001	--	0.0001
			Beryllium	--	8E-12	--	--	8E-12	Lungs	--	0.000002	--	0.000002
			Cobalt	--	9E-10	--	--	9E-10	Lungs	--	0.0002	--	0.0002
			Iron	--	--	--	--	--	NA	--	--	--	--
			Manganese (soil)	--	--	--	--	--	CNS	--	0.0008	--	0.0008
						Chemical Total	--	2E-09	--	--	2E-09		--

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total	
		Exposure Point Total						2E-09						0.001
		Exposure Medium Total						2E-09						0.001
Medium Total								5E-05						2

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
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Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient							
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total			
Subsurface Soil	Subsurface Soil	Tank Farm 4	Benzo(a)anthracene	3E-07	--	9E-08	--	4E-07	NA	--	--	--	--			
			Benzo(a)pyrene	2E-06	--	9E-07	--	3E-06	NA	--	--	--	--			
			Benzo(b)fluoranthene	3E-07	--	1E-07	--	4E-07	NA	--	--	--	--			
			Benzo(g,h,i)perylene	--	--	--	--	--	Kidney	0.00002	--	0.000006	0.00002			
			Benzo(k)fluoranthene	9E-08	--	3E-08	--	1E-07	NA	--	--	--	--			
			Chrysene	1E-07	--	4E-08	--	1E-07	NA	--	--	--	--			
			Dibenzo(a,h)anthracene	5E-07	--	2E-07	--	6E-07	NA	--	--	--	--			
			Fluoranthene	--	--	--	--	--	Liver	0.00004	--	0.00001	0.00005			
			Indeno(1,2,3-cd)pyrene	1E-07	--	5E-08	--	2E-07	NA	--	--	--	--			
			Pyrene	--	--	--	--	--	Kidney	0.00004	--	0.00001	0.00006			
			Aroclor-1254	2E-07	--	9E-08	--	3E-07	Immune	0.06	--	0.03	0.09			
			2,3,7,8-TCDD Equivalents	4E-07	--	3E-08	--	4E-07	Developmental	0.03	--	0.003	0.04			
			Arsenic	3E-05	--	3E-06	--	3E-05	Skin, CVS	0.8	--	0.07	0.9			
			Beryllium	--	--	--	--	--	GS	0.003	--	--	0.003			
			Cobalt	--	--	--	--	--	Blood	0.8	--	--	0.8			
			Iron	--	--	--	--	--	GS	0.8	--	--	0.8			
			Manganese (soil)	--	--	--	--	--	CNS	0.10	--	--	0.10			
			Thallium	--	--	--	--	--	NA	--	--	--	--			
						Chemical Total	4E-05	--	4E-06	--	4E-05		3	--	0.10	3
						Exposure Point Total										
			Exposure Medium Total													
Air	Air	Tank Farm 4	Benzo(a)anthracene	--	3E-13	--	--	3E-13	NA	--	--	--	--			
			Benzo(a)pyrene	--	3E-12	--	--	3E-12	NA	--	--	--	--			
			Benzo(b)fluoranthene	--	3E-13	--	--	3E-13	NA	--	--	--	--			
			Benzo(g,h,i)perylene	--	--	--	--	--	NA	--	--	--	--			
			Benzo(k)fluoranthene	--	9E-13	--	--	9E-13	NA	--	--	--	--			
			Chrysene	--	1E-12	--	--	1E-12	NA	--	--	--	--			
			Dibenzo(a,h)anthracene	--	5E-13	--	--	5E-13	NA	--	--	--	--			
			Fluoranthene	--	--	--	--	--	NA	--	--	--	--			
			Indeno(1,2,3-cd)pyrene	--	1E-13	--	--	1E-13	NA	--	--	--	--			
			Pyrene	--	--	--	--	--	NA	--	--	--	--			
			Aroclor-1254	--	4E-13	--	--	4E-13	NA	--	--	--	--			
			2,3,7,8-TCDD Equivalents	--	8E-13	--	--	8E-13	Liver, Respiratory, Developmental	--	6E-09	--	6E-09			

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 30 OF 35

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
			Arsenic	--	6E-10	--	--	6E-10	NA	--	0.0001	--	0.0001
			Beryllium	--	7E-12	--	--	7E-12	Lungs	--	0.000002	--	0.000002

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 31 OF 35

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Air	Tank Farm 4	Cobalt	--	1E-09	--	--	1E-09	Lungs	--	0.0003	--	0.0003
			Iron	--	--	--	--	--	NA	--	--	--	--
			Manganese (soil)	--	--	--	--	--	CNS	--	0.002	--	0.002
			Thallium	--	--	--	--	--	NA	--	--	--	--
			Chemical Total	--	2E-09	--	--	2E-09		--	0.002	--	0.002
Exposure Point Total			2E-09					0.002					
Exposure Medium Total			2E-09					0.002					
Medium Total			4E-05					3					
Groundwater	Groundwater	Tank Farm 4	Naphthalene	--	--	--	--	--	Body Weight	0.0009	--	0.0004	0.001
			Endrin Aldehyde	--	--	--	--	--	Liver	2	--	0.4	2
			Aluminum	--	--	--	--	--	CNS	0.02	--	0.0001	0.02
			Arsenic	7E-05	--	3E-07	--	7E-05	Skin, CVS	2	--	0.009	2
			Cobalt	--	--	--	--	--	Blood	4	--	0.02	4
			Iron	--	--	--	--	--	GS	2	--	0.01	2
			Manganese (water)	--	--	--	--	--	CNS	19	--	2	21
			Chemical Total	7E-05	--	3E-07	--	7E-05		29	--	3	31
	Exposure Point Total			7E-05					31				
	Exposure Medium Total			7E-05					31				
	Air	Tank Farm 4	Naphthalene	--	--	--	--	--	Nasal	--	0.0009	--	0.0009
			Endrin Aldehyde	--	--	--	--	--	NA	--	--	--	--
			Aluminum	--	--	--	--	--	CNS	--	--	--	--
			Arsenic	--	--	--	--	--	NA	--	--	--	--
			Cobalt	--	--	--	--	--	Lungs	--	--	--	--
Iron			--	--	--	--	--	NA	--	--	--	--	
Manganese (water)			--	--	--	--	--	CNS	--	--	--	--	
Chemical Total	--	--	--	--	--		--	0.0009	--	0.0009			
Exposure Point Total			--					0.0009					
Exposure Medium Total			--					0.0009					
Medium Total			7E-05					31					
Receptor Total			Receptor Risk Total (Surface Soil and Groundwater)					Receptor HI Total (Surface Soil and Groundwater)					33
Receptor Total			Receptor Risk Total (Subsurface Soil and Groundwater)					Receptor HI Total (Subsurface Soil and Groundwater)					34

Notes:

1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 32 OF 35

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient			
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal

Total Blood HI	5
Total Body Weight HI	0.001
Total CNS HI	21
Total CVS HI	4
Total Developmental HI	0.08
Total GS HI	4
Total Immune HI	0.09
Total Kidney HI	0.0003
Total Liver HI	2
Total Lungs HI	0.0005
Total Nasal HI	0.0009
Total Skin HI	4
Total Respiratory HI	0.00000001

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 33 OF 35

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 4	Benzo(a)anthracene	9E-08	--	5E-08	--	1E-07	NA	--	--	--	--
			Benzo(a)pyrene	9E-07	--	5E-07	--	1E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	1E-07	--	6E-08	--	2E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	--	--	--	--	Kidney	0.000004	--	0.000002	0.000007
			Benzo(k)fluoranthene	3E-08	--	2E-08	--	5E-08	NA	--	--	--	--
			Chrysene	4E-08	--	2E-08	--	7E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	1E-07	--	7E-08	--	2E-07	NA	--	--	--	--
			Fluoranthene	--	--	--	--	--	Liver	0.000008	--	0.000004	0.00001
			Indeno(1,2,3-cd)pyrene	6E-08	--	3E-08	--	9E-08	NA	--	--	--	--
			Pyrene	--	--	--	--	--	Kidney	0.00001	--	0.000005	0.00002
			2,3,7,8-TCDD Equivalents	2E-07	--	2E-08	--	2E-07	Developmental	0.004	--	0.0005	0.005
			Arsenic	2E-05	--	2E-06	--	2E-05	Skin, CVS	0.10	--	0.01	0.1
			Beryllium	--	--	--	--	--	GS	0.0003	--	--	0.0003
			Cobalt	--	--	--	--	--	Blood	0.06	--	--	0.06
			Iron	--	--	--	--	--	GS	0.07	--	--	0.07
			Manganese (soil)	--	--	--	--	--	CNS	0.004	--	--	0.004
						Chemical Total	2E-05	--	3E-06	--	2E-05		0.2
			Exposure Point Total					2E-05					0.3
			Exposure Medium Total					2E-05					0.3
Air	Air	Tank Farm 4	Benzo(a)anthracene	--	8E-13	--	--	8E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	8E-12	--	--	8E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	--	--	--	--	NA	--	--	--	--
			Benzo(k)fluoranthene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Chrysene	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Fluoranthene	--	--	--	--	--	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Pyrene	--	--	--	--	--	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	4E-12	--	--	4E-12	Liver, Respiratory, Developmental	--	7E-09	--	7E-09
			Arsenic	--	3E-09	--	--	3E-09	NA	--	0.0001	--	0.0001
			Beryllium	--	3E-11	--	--	3E-11	Lungs	--	0.000002	--	0.000002
			Cobalt	--	4E-09	--	--	4E-09	Lungs	--	0.0002	--	0.0002
			Iron	--	--	--	--	--	NA	--	--	--	--
			Manganese (soil)	--	--	--	--	--	CNS	--	0.0008	--	0.0008
						Chemical Total	--	6E-09	--	--	6E-09		--

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 34 OF 35

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient					
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total	
		Exposure Point Total						6E-09						0.001
		Exposure Medium Total						6E-09						0.001
Medium Total								2E-05						0.3

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 35 OF 35

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient							
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total			
Subsurface Soil	Subsurface Soil	Tank Farm 4	Benzo(a)anthracene	4E-08	--	2E-08	--	6E-08	NA	--	--	--	--			
			Benzo(a)pyrene	4E-07	--	2E-07	--	6E-07	NA	--	--	--	--			
			Benzo(b)fluoranthene	4E-08	--	2E-08	--	6E-08	NA	--	--	--	--			
			Benzo(g,h,i)perylene	--	--	--	--	--	Kidney	0.000002	--	0.000009	0.000002			
			Benzo(k)fluoranthene	1E-08	--	7E-09	--	2E-08	NA	--	--	--	--			
			Chrysene	2E-08	--	8E-09	--	2E-08	NA	--	--	--	--			
			Dibenzo(a,h)anthracene	7E-08	--	4E-08	--	1E-07	NA	--	--	--	--			
			Fluoranthene	--	--	--	--	--	Liver	0.000004	--	0.000002	0.000006			
			Indeno(1,2,3-cd)pyrene	2E-08	--	1E-08	--	3E-08	NA	--	--	--	--			
			Pyrene	--	--	--	--	--	Kidney	0.000004	--	0.000002	0.000007			
			Aroclor-1254	9E-08	--	5E-08	--	1E-07	Immune	0.007	--	0.004	0.01			
			2,3,7,8-TCDD Equivalents	2E-07	--	2E-08	--	2E-07	Developmental	0.004	--	0.0004	0.004			
			Arsenic	1E-05	--	2E-06	--	2E-05	Skin, CVS	0.09	--	0.01	0.10			
			Beryllium	--	--	--	--	--	GS	0.0003	--	--	0.0003			
			Cobalt	--	--	--	--	--	Blood	0.09	--	--	0.09			
			Iron	--	--	--	--	--	GS	0.08	--	--	0.08			
			Manganese (soil)	--	--	--	--	--	CNS	0.01	--	--	0.01			
			Thallium	--	--	--	--	--	NA	--	--	--	--			
						Chemical Total	1E-05	--	2E-06	--	2E-05		0.3	--	0.01	0.3
						Exposure Point Total										0.3
			Exposure Medium Total										0.3			
Air	Air	Tank Farm 4	Benzo(a)anthracene	--	4E-13	--	--	4E-13	NA	--	--	--	--			
			Benzo(a)pyrene	--	3E-12	--	--	3E-12	NA	--	--	--	--			
			Benzo(b)fluoranthene	--	4E-13	--	--	4E-13	NA	--	--	--	--			
			Benzo(g,h,i)perylene	--	--	--	--	--	NA	--	--	--	--			
			Benzo(k)fluoranthene	--	1E-12	--	--	1E-12	NA	--	--	--	--			
			Chrysene	--	2E-12	--	--	2E-12	NA	--	--	--	--			
			Dibenzo(a,h)anthracene	--	7E-13	--	--	7E-13	NA	--	--	--	--			
			Fluoranthene	--	--	--	--	--	NA	--	--	--	--			
			Indeno(1,2,3-cd)pyrene	--	2E-13	--	--	2E-13	NA	--	--	--	--			
			Pyrene	--	--	--	--	--	NA	--	--	--	--			
			Aroclor-1254	--	2E-12	--	--	2E-12	NA	--	--	--	--			
			2,3,7,8-TCDD Equivalents	--	3E-12	--	--	3E-12	Liver, Respiratory, Developmental	--	6E-09	--	6E-09			

APPENDIX C
COST AND VOLUME ESTIMATES

C1 – COST ESTIMATES FOR SOIL ALTERNATIVES

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 DU 4-1 FS - Basis of Cost Estimates for Soil Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011, 6/23/12	Date: 5/1/13		

SOIL ALTERNATIVES**Alternative SO1: No Action**

No action; no costs associated.

Alternative SO2: Land Use Controls (LUCs) and Monitoring*Capital Cost*LUCs to Prevent exposure to COCs

Establish LUCs to restrict site use to restricted recreational and industrial uses

Prepare LUC Remedial Design (LUC RD) in Draft, Draft Final and Final versions

Total Cost = \$9,100

*Annual Cost*Yearly Site Inspection/Visit for LUCs implementation (1 person)

Assume out of town travel to site, site interior and perimeter walk, interview of key personnel.

Car	\$100
Hours	\$900 (12 hours * \$75/hr)
Report	\$1,200
Misc	\$150
Total Cost	\$2,350

*Five year cost*5-year review:

Assumes that this is a component of the Five-year review for all the IRP sites at NAVSTA Newport

Summarize inspections, describe findings, update history and regulatory information

Publish report as a part of the Five year review for IRP sites.

Total Cost = \$23,000

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 DU 4-1 FS - Basis of Cost Estimates for Soil Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011, 6/23/12	Date: 5/1/13		

Alternative SO3: Excavation, Off-Site Disposal, LUCs and Monitoring

Capital Cost - Construction Planning

Project Documents

Prepare RA Work Plan, HASP, specifications, Draft and Final Documents
Wetland restoration plan for Area 3

LUCs to prevent exposure to metals not addressed by RA

Establish LUCs to restrict site use to restricted recreational and industrial uses
Prepare LUC Remedial Design (LUC RD) in Draft, Draft Final and Final versions

Total Cost = \$9,100

Capital Cost - Predesign Investigation

4 Areas to be investigated:

- Area 1 - PAH Hot spot area at SB934
- Area 2 - Elevated Concentration area for arsenic at SB943
- Area 3 - Former Test pit area
- Area 4 - Soil/Debris Berm

PDI Work Plan/UFP SAP

2 people @ \$85.00 per hour for 8 hour preparatory meeting =	\$1,360
analytical specifications, 1 chemist, 16 hours =	\$1,680
SAP preparation/review/revise =	\$13,600
miscellaneous supplies, coppies, etc. =	\$500
	<u>\$17,140</u>

Predesign Investigation

Labor and Materials

2 people @ \$85.00 per hour for 10 hours per for 8 days =	\$13,600	Labor
truck for 5 days =	\$400	Sub
report @ \$105.00 per hour for 60 hours =	\$6,300	Labor
IDW disposal =	\$450	Sub
PDI Report Preparation =	\$3,400	Labor
Submit Draft, Comment resolution, Final =	\$3,150	Labor
Misc supplies, copying, etc. =	\$4,000	material
	<u>\$31,300</u>	

Drilling Subcontractor

Assume 5 days at a day rate of \$7,500

Backhoe @1200 for 2 days =	\$2,400
Drill rig & crew all mat and supplies @ \$5,500 for 5 days =	\$27,500
	<u>\$29,900</u>

Analytical

	type	cost each	number	total
Areas 1, 3, 4	PAHs	\$150	120	\$18,000
Area 2	metals	\$130	120	\$15,600
				<u>\$33,600</u>
	40% QA/QC & Data Validation			\$13,440
				<u>\$47,040</u>

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 DU 4-1 FS - Basis of Cost Estimates for Soil Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011, 6/23/12	Date: 5/1/13		

Alternative SO3 (con't): Excavation, Off-Site Disposal, LUCs and Monitoring

Capital Cost - Construction See Continuation Sheet

Mobilization/Demobilization

Transportation and setup costs for primary equipment and facilities
Electricity hookup not anticipated

Field support

Trailer, secured storage, misc equipment costs - monthly
On-Site labor supervision during construction including H&S, Site Super etc

Site Preparation

Cut & chip trees, dispose off-site as debris, assume 50 tons
Chip stumps, dispose with excavated soil

Decontamination

Includes decontamination of heavy equipment and tools, as well as personnel as needed
Includes setup/demolition/disposal of decontamination pad, capture and disposal of wash water as well as capture and disposal of solids.

Excavation, Disposal, Grading

Area 1 - PAH area excavated 50x50 foot area to a depth of 4 feet
Area 2 - Arsenic area excavated 25x25 foot area to a depth of 2 feet
Area 3 - Arsenic area excavated 25x25 foot area to a depth of 2 feet

	Area 1	Area 2	Area 3	Area 4		
	SB934	SB943	TP Area	Berm Area		
	50'x50'x4'	50x50x2	TBD	TBD	TOTAL	
CF:	10000	5000	TBD	TBD	15000	CF in place
Cy	370	185	TBD	TBD	556	CY in place
Cu	37	19	TBD	TBD	56	CY expanded
	407	204	TBD	TBD	611	CY Total
					917	total tons

Assume 22 tons per truck @ 5 trucks per day disposal as subtitle "D" = 7 days

Site Restoration

Backfill to one foot below grade with common fill:

	Area 1	Area 2	Area 3	Area 4		
	SB934	SB943	TP Area	Berm Area		
	50'x50'x3'	50x50x2	TBD	TBD	TOTAL	
	7500	5000	TBD	TBD	5000	CF in place
	278	185	TBD	TBD	185	CY in place
	28	19	TBD	TBD	19	CY expanded
	306	204	TBD	TBD	204	CY Total
					306	total tons

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 DU 4-1 FS - Basis of Cost Estimates for Soil Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011, 6/23/12	Date: 5/1/13		

Alternative SO3 (con't): Excavation, Off-Site Disposal, LUCs and Monitoring
Capital Cost - Construction (continued) See Continuation Sheet

Topsoil and seeding to prevent erosion
 Backfill to grade from one foot below grade with topsoil:

	Area 1	Area 2	Area 3	Area 4	
	SB934	SB943	TP Area	Berm Area	
	50'x50'x1'	50'x50'x1'	TBD	TBD	TOTAL
	2500	625	TBD	TBD	3125 CF in place
	93	23	TBD	TBD	116 CY in place
Fluff factor of 0.1 =	9	2	TBD	TBD	12 CY expanded
Total topsoil =	102	25	TBD	TBD	127 CY Total

Revegetation

Assume 100' X 100' area = 10000 SF
 10 MSF

Time to complete work

Mob & setup	3 days	
Clear & grub	4 days	
Excavate, regrade, & dispose	7 days	
Regrade & place backfill	4 days	
Demob	2 days	
	<u>20 days</u>	
	or 4 Weeks	
	or 1.0 Month	(assume 1 month)

Post Construction

Prepare RA Completion Report, Draft and Final Documents

Annual Cost

Annual Groundwater monitoring

\$25,638 Per year

Costs for annual groundwater monitoring are included here for completeness

Costs for groundwater monitoring are not rolled up on the soil present worth Table C1-9

It is assumed that groundwater monitoring will be required for the groundwater alternatives

Only one groundwater monitoring program would be conducted at the site

Yearly Site Inspection/Visit for LUCs implementation (1 person)

Assume out of town travel to site, site interior and perimeter walk, interview of key personnel.

Car	\$100
Hours	\$900 (12 hours * \$75/hr)
Report	\$1,200
Misc	\$150
Total Inspection	<u>\$2,350</u>
Total annual cost	\$27,988

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 DU 4-1 FS - Basis of Cost Estimates for Soil Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011, 6/23/12	Date: 5/1/13		

Alternative SO3 (con't): Excavation, Off-Site Disposal, LUCs and Monitoring

Five year cost

5-year review:

Assumes that this is a component of the Five-year review for all the IRP sites at NAVSTA Newport

Summarize inspections, describe findings, update history and regulatory information

Publish report as a part of the Five year review for IRP sites.

Total Cost = \$23,000

TABLE C1-1
Cost Backup - Capital Costs
Soil Alternative SO-1
Site 12, Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal
				Material	Labor	Equipment	Subcontract	Material	Labor	
NO ACTION							\$0	\$0	\$0	\$0
Subtotal							\$0	\$0	\$0	\$0
Overhead on Labor Cost @ 30%								\$0		\$0
G & A on Labor, Material, Equipment, & Subs Cost @ 10%							\$0	\$0	\$0	\$0
Tax on Materials and Equipment Cost @ 6%								\$0		\$0
Total Direct Cost							\$0	\$0	\$0	\$0
Indirects on Total Direct Cost @ 0%										\$0
Profit on Total Direct Cost @ 10%										\$0
Subtotal										\$0
Health & Safety Monitoring @ 0%										\$0
Total Field Cost										\$0
Contingency on Total Field Costs @ 10%										\$0
Engineering on Total Field Cost @ 0%										\$0
TOTAL CAPITAL COST										\$0

Source

TABLE C1-2
Cost Backup - Annual and Five - Year Costs
Soil Alternative SO-1 - No Action
Site 12, Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

Item	Item Cost Every 5 Years	Notes
No Action	\$0	No Action
Five Year Review	<u>\$0</u>	Not applicable
Subtotal	\$0	
Contingency @ 10%	<u>\$0</u>	
TOTAL	\$0	

TABLE C1-3
Cost Backup - Present Worth Analysis
Soil Alternative SO-1 - No Action
Site 12, Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate 2.0%	Present Worth
0	\$0		\$0	1.000	\$0
1			\$0	0.980	\$0
2			\$0	0.961	\$0
3			\$0	0.942	\$0
4			\$0	0.924	\$0
5		\$0	\$0	0.906	\$0
6			\$0	0.888	\$0
7			\$0	0.871	\$0
8			\$0	0.853	\$0
9			\$0	0.837	\$0
10		\$0	\$0	0.820	\$0
11			\$0	0.804	\$0
12			\$0	0.788	\$0
13			\$0	0.773	\$0
14			\$0	0.758	\$0
15		\$0	\$0	0.743	\$0
16			\$0	0.728	\$0
17			\$0	0.714	\$0
18			\$0	0.700	\$0
19			\$0	0.686	\$0
20		\$0	\$0	0.673	\$0
21			\$0	0.660	\$0
22			\$0	0.647	\$0
23			\$0	0.634	\$0
24			\$0	0.622	\$0
25		\$0	\$0	0.610	\$0
26			\$0	0.598	\$0
27			\$0	0.586	\$0
28			\$0	0.574	\$0
29			\$0	0.563	\$0
30		\$0	\$0	0.552	\$0
TOTAL PRESENT WORTH					\$0

TABLE C1-4

Cost Backup - Capital Costs
 Soil Alternative SO-2 - Land Use Controls and Monitoring
 Site 12, Tank Farm 4, DU 4-1
 NAVAL STATION (NAVSTA) NEWPORT
 NEWPORT, RI

Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal		
				Material	Labor	Equipment	Subcontract	Material	Labor		Equipment	
1 PROJECT PLANNING & DOCUMENTS												
1.1 Prepare LUC RD Documents	1	ea	\$9,100.00				\$9,100	\$0	\$0	\$0	\$9,100	
1.2 Fencing and Signage	1	ea	\$5,000.00				\$5,000	\$0	\$0	\$0	\$5,000	
Subtotal							\$14,100	\$0	\$0	\$0	\$14,100	
Overhead on Labor Cost @ 30%									\$0			\$0
G & A on Labor, Material, Equipment, & Subs Cost @ 10%							\$1,410	\$0	\$0	\$0	\$0	\$1,410
Tax on Materials and Equipment Cost @ 6%								\$0		\$0		\$0
Total Direct Cost							\$1,410	\$0	\$0	\$0	\$0	\$15,510
Indirects on Total Direct Cost @ 0%												\$0
Profit on Total Direct Cost @ 10%												\$1,551
Subtotal												\$17,061
Health & Safety Monitoring @ 0%												\$0
Total Field Cost												\$17,061
Contingency on Total Field Costs @ 10%												\$1,706
Engineering on Total Field Cost @ 0%												\$0
TOTAL CAPITAL COST												\$18,767

TABLE C1-5
Cost Backup - Annual and Five - Year Costs
Soil Alternative SO-2 - Land Use Controls and Monitoring
Site 12, Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

Item	Item Cost Annual	Item Cost every 5 years	Notes
LUCs Inspection & Report	\$2,350		One-day visit to verify LUCs with Report
Fencing and Signage maint	\$500		
Five -Year Review		\$23,000	Assumes that this is a component of the NAVSTA Newport IRP Five Year Reivew
Subtotal	\$2,850	\$23,000	
Contingency @ 10%	\$285	\$2,300	
TOTAL	\$3,135	\$25,300	Cost with contingency is used for Present Worth Analysis.

TABLE C1-6
Cost Backup - Present Worth Analysis
Soil Alternative SO-2 - Land Use Controls and Monitoring
Site 12, Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate 2.0%	Present Worth
0	\$18,767		\$18,767	1.000	\$18,767
1		\$3,135	\$3,135	0.980	\$3,074
2		\$3,135	\$3,135	0.961	\$3,013
3		\$3,135	\$3,135	0.942	\$2,954
4		\$3,135	\$3,135	0.924	\$2,896
5		\$28,435	\$28,435	0.906	\$25,754
6		\$3,135	\$3,135	0.888	\$2,784
7		\$3,135	\$3,135	0.871	\$2,729
8		\$3,135	\$3,135	0.853	\$2,676
9		\$3,135	\$3,135	0.837	\$2,623
10		\$28,435	\$28,435	0.820	\$23,327
11		\$3,135	\$3,135	0.804	\$2,521
12		\$3,135	\$3,135	0.788	\$2,472
13		\$3,135	\$3,135	0.773	\$2,423
14		\$3,135	\$3,135	0.758	\$2,376
15		\$28,435	\$28,435	0.743	\$21,128
16		\$3,135	\$3,135	0.728	\$2,284
17		\$3,135	\$3,135	0.714	\$2,239
18		\$3,135	\$3,135	0.700	\$2,195
19		\$3,135	\$3,135	0.686	\$2,152
20		\$28,435	\$28,435	0.673	\$19,136
21		\$3,135	\$3,135	0.660	\$2,068
22		\$3,135	\$3,135	0.647	\$2,028
23		\$3,135	\$3,135	0.634	\$1,988
24		\$3,135	\$3,135	0.622	\$1,949
25		\$28,435	\$28,435	0.610	\$17,332
26		\$3,135	\$3,135	0.598	\$1,873
27		\$3,135	\$3,135	0.586	\$1,837
28		\$3,135	\$3,135	0.574	\$1,801
29		\$3,135	\$3,135	0.563	\$1,765
30		\$28,435	\$28,435	0.552	\$15,698
TOTAL PRESENT WORTH					\$197,863

TABLE C1-7
Cost Backup - Capital Costs
Soil Alternative SO3: Hot Spot Excavation, Off-Site Disposal, LUCs, and Inspections
Site 12, Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost				Subtotal
				Material	Labor	Equipment	Subcontract	Material	Labor	Equipment	
1 DOCUMENTS AND CONSTRUCTION PLANNING											
1.1 Prepare RAWP, HASP, Specs,	300	hr			\$37.00		\$0	\$0	\$11,100	\$0	\$11,100
1.2 Wetland restoration plan	75	hr			\$37.00		\$0	\$0	\$2,775	\$0	\$2,775
1.3 LUC RD	1	LS	\$9,100.00				\$9,100	\$0	\$0	\$0	\$9,100
2 PRE-DESIGN INVESTIGATION (see basis sheet)											
2.1 SAP preparation	1	ls			\$17,140.00		\$0	\$0	\$17,140	\$0	\$17,140
2.2 Sampling labor and materials	1	ls	\$850.00	\$4,000.00	\$26,450.00		\$850	\$4,000	\$26,450	\$0	\$31,300
2.3 Analytical analysis of soil samples	1	ls	\$47,040.00				\$47,040	\$0	\$0	\$0	\$47,040
2.4 Drilling subcontractor	1	ls	\$29,900.00				\$29,900	\$0	\$0	\$0	\$29,900
3 MOBILIZATION AND DEMOBILIZATION											
3.1 Site Support Facilities (trailers, phone, electric, etc.)	1	ls		\$1,000.00		\$3,500.00	\$0	\$1,000	\$0	\$3,500	\$4,500
3.2 Equipment Mobilization/Demobilization	4	ea			\$177.00	\$610.00	\$0	\$0	\$708	\$2,440	\$3,148
4 FIELD SUPPORT AND SITE ACCESS											
4.1 Office Trailer	1	mo				\$360.00	\$0	\$0	\$0	\$360	\$360
4.2 Field Office Equipment, Utilities, & Support	1	mo		\$470.00			\$0	\$470	\$0	\$0	\$470
4.3 Storage Trailer	1	mo				\$92.50	\$0	\$0	\$0	\$93	\$93
4.4 Survey Support	2	day	\$1,075.00				\$2,150	\$0	\$0	\$0	\$2,150
4.5 Site Superintendent	14	day		\$206.00	\$384.64		\$0	\$2,884	\$5,385	\$0	\$8,269
4.6 Site Health & Safety and QA/QC	14	day		\$206.00	\$307.68		\$0	\$2,884	\$4,308	\$0	\$7,192
4.7 Underground Utility Clearance	1	ls	\$10,525.00				\$10,525	\$0	\$0	\$0	\$10,525
5 DECONTAMINATION											
5.1 Decontamination Services	1.0	mo		\$1,220.00	\$2,245.00	\$1,550.00	\$0	\$1,220	\$2,245	\$1,550	\$5,015
5.2 Equipment Decon Pad	1	ls		\$4,500.00	\$3,000.00	\$725.00	\$0	\$4,500	\$3,000	\$725	\$8,225
5.3 Decon Water	3,000	gal		\$0.20			\$0	\$600	\$0	\$0	\$600
5.4 Decon Water Storage Tank, 6,000 gallon	1	mo				\$771.00	\$0	\$0	\$0	\$771	\$771
5.5 Clean Water Storage Tank, 6,000 gallon	1	mo				\$771.00	\$0	\$0	\$0	\$771	\$771
5.6 Disposal of Decon Waste (liquid & solid)	1	mo	\$985.00				\$985	\$0	\$0	\$0	\$985
6 SITE PREPARATION											
6.1 Excavator, 2.5 cy	3	day			\$355.20	\$1,784.00	\$0	\$0	\$1,066	\$5,352	\$6,418
6.2 Skid-Steer	3	day			\$333.40	\$291.00	\$0	\$0	\$1,000	\$873	\$1,873
6.3 Site Labor, (3 laborers)	7	day			\$264.80		\$0	\$0	\$1,854	\$0	\$1,854
6.4 Clear & Chip Trees	4	day			\$333.40	\$689.60	\$0	\$0	\$1,334	\$2,758	\$4,092
6.5 Grub Stumps and Chip	4	day				\$190.90	\$0	\$0	\$0	\$764	\$764
6.6 Off-Site Disposal of Chipped Trees	50	ton	\$45.00				\$2,250	\$0	\$0	\$0	\$2,250
7 EXCAVATION, DISPOSAL											
7.1 Excavator, 2.5 cy	7	day			\$355.20	\$1,784.00	\$0	\$0	\$2,486	\$12,488	\$14,974
7.2 Skid-Steer	7	day			\$333.40	\$291.00	\$0	\$0	\$2,334	\$2,037	\$4,371
7.3 Site Labor, (3 laborers)	7	day			\$264.80		\$0	\$0	\$1,854	\$0	\$1,854
7.4 Verification Samples, PAHs, metals	30	ea	\$360.00	\$20.00	\$50.00	\$20.00	\$10,800	\$600	\$1,500	\$600	\$13,500
7.5 T & D of Excavated Soil-debris, non-hazardous	917	ton	\$85.00				\$77,945	\$0	\$0	\$0	\$77,945
7.6 Waste Disposal Characterization / Analytical	4	ea	\$850.00	\$30.00	\$50.00	\$30.00	\$3,400	\$120	\$200	\$120	\$3,840
8 SITE RESTORATION											
8.1 Backfill, common fill	306	cy		\$17.96			\$0	\$5,496	\$0	\$0	\$5,496
8.2 Backfill, vegetative soil	127	cy		\$27.67			\$0	\$3,514	\$0	\$0	\$3,514
8.3 Revegetation, seed	10.0	msf	\$77.50				\$775	\$0	\$0	\$0	\$775
8.4 Dozer, 300 hp	4	day			\$343.90	\$1,592.00	\$0	\$0	\$1,376	\$6,368	\$7,744
8.5 Compactor, 120 hp	4	day			\$343.90	\$560.60	\$0	\$0	\$1,376	\$2,242	\$3,618
8.6 Skid-Steer	4	day			\$333.40	\$291.00	\$0	\$0	\$1,334	\$1,164	\$2,498
8.7 Site Labor (3 laborers) (cover)	6	day			\$264.80		\$0	\$0	\$1,589	\$0	\$1,589
9 POST CONSTRUCTION COST											
9.1 Contractor Completion Report	150	hr			\$37.00		\$0	\$0	\$5,550	\$0	\$5,550
9.2 Remedial Action Closeout Report	200	hr			\$37.00		\$0	\$0	\$7,400	\$0	\$7,400
Subtotal							\$195,720	\$27,288	\$105,361	\$44,976	\$373,345

continued next page

NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

5/1/2013 2:47 PM

Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal	
				Material	Labor	Equipment	Subcontract	Material	Labor		Equipment
Overhead on Labor Cost @ 30%									\$31,608	\$31,608	
G & A on Labor, Material, Equipment, & Subs Cost @ 10%							\$19,572	\$2,729	\$10,536	\$4,498	\$37,334
Tax on Materials and Equipment Cost @ 7.0%								\$1,910		\$3,148	\$5,058
Total Direct Cost							\$215,292	\$31,927	\$147,505	\$52,622	\$447,346
Indirects on Total Direct Cost @ 25% (excluding transportation and disposal cost)											\$92,104
Profit on Total Direct Cost @ 10%											\$44,735
Subtotal											\$584,184
Health & Safety Monitoring @ 2%											\$11,684
Total Field Cost											\$595,868
Engineering on Total Field Cost @ 5%											\$29,793
Contingency on Total Field Cost @ 20%											\$119,174
TOTAL CAPITAL COST											\$744,835

TABLE C1-8
Cost Backup - Annual and Five - Year Costs
Soil Alternative SO3: Hot Spot Excavation, Off-Site Disposal, LUCs, and Inspections
Site 12, Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

Item	Item Cost years 1 - 30	Item Cost years 1-5	Item Cost every 5 years	Notes
LUCs Inspection & Report	\$2,350			One-day visit to verify LUCs with Report
Groundwater Monitoring	\$0			Annual monitoring is required, but assumed to be conducted under the groundwater remedial alternative.
Five -Year Review			\$23,000	Assumes that this is a component of the NAVSTA Newport IRP Five Year Reivew
Subtotal	\$2,350	\$0	\$23,000	
Contingency @ 10%	\$235	\$0	\$2,300	Cost with contingency is used for Present Worth Analysis.
TOTAL	\$2,585	\$0	\$25,300	

TABLE C1-9
Cost Backup - Present Worth Analysis
Soil Alternative SO3: Hot Spot Excavation, Off-Site Disposal, LUCs, and Inspections
Site 12, Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate 2.0%	Present Worth
0	\$744,835		\$744,835	1.000	\$744,835
1		\$2,585	\$2,585	0.980	\$2,534
2		\$2,585	\$2,585	0.961	\$2,485
3		\$2,585	\$2,585	0.942	\$2,436
4		\$2,585	\$2,585	0.924	\$2,388
5		\$27,885	\$27,885	0.906	\$25,256
6		\$2,585	\$2,585	0.888	\$2,295
7		\$2,585	\$2,585	0.871	\$2,250
8		\$2,585	\$2,585	0.853	\$2,206
9		\$2,585	\$2,585	0.837	\$2,163
10		\$27,885	\$27,885	0.820	\$22,875
11		\$2,585	\$2,585	0.804	\$2,079
12		\$2,585	\$2,585	0.788	\$2,038
13		\$2,585	\$2,585	0.773	\$1,998
14		\$2,585	\$2,585	0.758	\$1,959
15		\$27,885	\$27,885	0.743	\$20,719
16		\$2,585	\$2,585	0.728	\$1,883
17		\$2,585	\$2,585	0.714	\$1,846
18		\$2,585	\$2,585	0.700	\$1,810
19		\$2,585	\$2,585	0.686	\$1,774
20		\$27,885	\$27,885	0.673	\$18,766
21		\$2,585	\$2,585	0.660	\$1,706
22		\$2,585	\$2,585	0.647	\$1,672
23		\$2,585	\$2,585	0.634	\$1,639
24		\$2,585	\$2,585	0.622	\$1,607
25		\$27,885	\$27,885	0.610	\$16,997
26		\$2,585	\$2,585	0.598	\$1,545
27		\$2,585	\$2,585	0.586	\$1,514
28		\$2,585	\$2,585	0.574	\$1,485
29		\$2,585	\$2,585	0.563	\$1,456
30		\$27,885	\$27,885	0.552	\$15,394
TOTAL PRESENT WORTH					\$911,613

C2 – COST ESTIMATES FOR GROUNDWATER ALTERNATIVES

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 FS - Basis of Cost Estimates for Groundwater Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011	Date: 6/26/12		

Groundwater Alternatives

Alternative GW 1: No Action

No action; no costs associated.

Alternative GW 2: Land Use Controls (LUCs) and Monitored Natural Attenuation

Capital Cost

LUCs

Establish LUCs to restrict site use to restrict groundwater use
 Prepare LUC Remedial Design (LUC RD) in Draft, Draft Final and Final versions
 Total Direct Cost = \$9,100

MNA Work Plan

Prepare MNA Work Plan (UFP SAP) Draft and Final Documents
 Assumes monitoring only for COCs and MNA parameters
 Prepare Site Specific Health and Safety Plan
 Total Direct Cost = \$17,140

Field Cost

Drilling Subcontractor

Assume 3 days at a day rate of \$7,500

Well installation oversight (one geologist, 3 days, \$85/hr) =	\$2,550 labor
Misc supplies, equipment, copying, etc. =	\$2,500 material, equip
Drilling contractor @ \$7,550/day for 3 days =	\$22,650 subcontract
	<u>\$27,700</u>

Annual Cost - Inspections

Yearly Site Inspection/Visit for LUCs implementation (1 person)

Assume out of town travel to site.

Car	\$100
Hours	\$900 (12 hours * \$75/hr)
Report	\$1,200
Misc	\$150
	<u>\$2,350</u>

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 FS - Basis of Cost Estimates for Groundwater Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011	Date: 6/26/12		

Alternative GW 2: Land Use Controls (LUCs) and Monitored Natural Attenuation (con't)

Annual Cost - Monitored Natural Attenuation

Labor & Materials

Assume 3 days to sample with 2 people, local plus 1 day of preparations

2 people @ \$85.00 per hour for 30 hours =	\$5,100 Labor
Data eval & Draft report @ \$105.00 per hour for 64 hours =	\$6,720 Labor
IDW disposal =	\$150 Sub
Comment resolution, & Final 40 hours =	\$4,200 Labor
Misc supplies, copying, etc. =	\$3,000 material, equip
	<u>\$19,170</u>

Analytical

Analyze 14 groundwater samples for metals, PAHs, misc parameters

	type	cost each	number	total
	PAHs	\$150	14	\$2,100
	DO, ORP, pH, conductivity, etc.	\$50	14	\$700
	metals	\$130	14	<u>\$1,820</u>
				\$4,620
	40% QA/QC & Data Validation			<u>\$1,848</u>
				\$6,468

Years 1-2 - Quarterly monitoring	\$25,638 Per event
	\$102,552 Per year
Years 3-30- Semiannual monitoring	\$25,638 per event
	\$25,638 Per year

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 FS - Basis of Cost Estimates for Groundwater Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011	Date: 6/26/12		

Alternative GW 3: In-Situ Bioprecipitation, LUCs and Monitoring

Capital Cost

LUCs - See GW2

In -Situ Treatment - See Below and Tables C2-7 and C2-8

Design documents
Pilot study (20 Injection wells)
Full Treatment (60 additional Wells) year 0
Quarterly Long Term Monitoring (LTM) years 0 and 1
Second Treatment Year 2
Quarterly LTM years 2 and 3
Semiannual LTM Years 4-30
Annual LTM Reports

LTM Work Plan

Prepare MNA Work Plan (UFP SAP) Draft and Final Documents
Assumes monitoring only for COCs and MNA parameters
Prepare Site Specific Health and Safety Plan
Total Direct Cost = \$17,140

Field Cost

Drilling Subcontractor

Assume 3 days at a day rate of \$7,500

Well installation oversight (one geologist, 3 days, \$85/hr) =	\$2,550 labor
Misc supplies, equipment, copying, etc. =	\$2,500 material, equip
Drilling contractor @ \$7,550/day for 3 days =	<u>\$22,650 subcontract</u>
	\$27,700

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 FS - Basis of Cost Estimates for Groundwater Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011	Date: 6/26/12		

Alternative GW 3: In-Situ Bioprecipitation, LUCs and Monitoring (con't)

LTM - Per Sampling Event

Labor & Materials

Assume 3 days to sample with 2 people, local plus 1 day of preparations

2 people @ \$85.00 per hour for 30 hours =	\$5,100 Labor
Data eval & Draft report @ \$105.00 per hour for 64 hours =	\$6,720 Labor
IDW disposal =	\$150 Sub
Comment resolution, & Final 40 hours =	\$4,200 Labor
Misc supplies, copying, etc. =	\$3,000 material, equip
	<u>\$19,170</u>

Analytical

Analyze 14 groundwater samples for metals, PAHs, misc parameters

	type	cost each	number	total
	PAHs	\$150	14	\$2,100
	DO, ORP, pH, conductivity, etc.	\$50	14	\$700
	metals	\$130	14	<u>\$1,820</u>
				\$4,620
	40% QA/QC & Data Validation			<u>\$1,848</u>
				\$6,468

Years 0-3 - Quarterly monitoring	\$25,638 Per event
	\$102,552 Per year
Years 4-30- Annual monitoring	\$25,638 per event
	\$25,638 Per year

CLIENT: NAVSTA NEWPORT		JOB NUMBER: 112G02698	
SUBJECT: Site 12 Tank Farm 4 FS - Basis of Cost Estimates for Groundwater Alternatives			
BASED ON:		DRAWING NUMBER:	
BY: BES	CHECKED BY: SSP	APPROVED BY:	DATE:
Date: 10-2011	Date: 6/26/12		

*Other Annual Cost*Yearly Site Inspection/Visit for LUCs implementation (1 person)

Assume out of town travel to site, site interior and perimeter walk, interview of key personnel.

Car	\$100
Hours	\$900 (12 hours * \$75/hr)
Report	\$1,200
Misc	\$150
Total Cost	\$2,350

*Five year cost*5-year review:

Assumes that this is a component of the Five-year review for all the IRP sites at NAVSTA Newport

Summarize inspections, describe findings, update history and regulatory information

Publish report as a part of the Five year review for IRP sites.

Total Cost = \$23,000

TABLE C2-1
Cost Backup: Capital Costs
Groundwater Alternative 1 - No Action
Site 12 - Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

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Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal	
				Material	Labor	Equipment	Subcontract	Material	Labor		Equipment
NO ACTION							\$0	\$0	\$0	\$0	\$0
Subtotal							\$0	\$0	\$0	\$0	\$0
Overhead on Labor Cost @ 30%									\$0		\$0
G & A on Labor, Material, Equipment, & Subs Cost @ 10%							\$0	\$0	\$0	\$0	\$0
Tax on Materials and Equipment Cost @ 6%								\$0	\$0		\$0
Total Direct Cost							\$0	\$0	\$0	\$0	\$0
Indirects on Total Direct Cost @ 0%											\$0
Profit on Total Direct Cost @ 10%											\$0
Subtotal											\$0
Health & Safety Monitoring @ 0%											\$0
Total Field Cost											\$0
Contingency on Total Field Costs @ 10%											\$0
Engineering on Total Field Cost @ 0%											\$0
TOTAL CAPITAL COST											\$0

TABLE C2-2
Cost Backup: Annual 1 & 5 Year Costs
Groundwater Alternative 1 - No Action
Site 12 - Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

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Item	Item Cost Annual	Item Cost every 5 years	Notes
Subtotal	\$0	\$0	
Contingency @ 10%	\$0	\$0	
TOTAL	\$0	\$0	

**TABLE C2-3
 Cost Backup: Present Worth Cost
 Groundwater Alternative 1 - No Action
 Site 12 - Tank Farm 4, DU 4-1
 NAVAL STATION (NAVSTA) NEWPORT
 NEWPORT, RI**

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate 2.0%	Present Worth
0	\$0		\$0	1.000	\$0
1		\$0	\$0	0.980	\$0
2		\$0	\$0	0.961	\$0
3		\$0	\$0	0.942	\$0
4		\$0	\$0	0.924	\$0
5		\$0	\$0	0.906	\$0
6		\$0	\$0	0.888	\$0
7		\$0	\$0	0.871	\$0
8		\$0	\$0	0.853	\$0
9		\$0	\$0	0.837	\$0
10		\$0	\$0	0.820	\$0
11		\$0	\$0	0.804	\$0
12		\$0	\$0	0.788	\$0
13		\$0	\$0	0.773	\$0
14		\$0	\$0	0.758	\$0
15		\$0	\$0	0.743	\$0
16		\$0	\$0	0.728	\$0
17		\$0	\$0	0.714	\$0
18		\$0	\$0	0.700	\$0
19		\$0	\$0	0.686	\$0
20		\$0	\$0	0.673	\$0
21		\$0	\$0	0.660	\$0
22		\$0	\$0	0.647	\$0
23		\$0	\$0	0.634	\$0
24		\$0	\$0	0.622	\$0
25		\$0	\$0	0.610	\$0
26		\$0	\$0	0.598	\$0
27		\$0	\$0	0.586	\$0
28		\$0	\$0	0.574	\$0
29		\$0	\$0	0.563	\$0
30		\$0	\$0	0.552	\$0
TOTAL PRESENT WORTH					\$0

TABLE C2-4
Cost Backup: Capital Cost
Groundwater Alternative 2 - LUCs & MNA
Site 12 - Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

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Item	Quantity	Unit	Subcontract	Unit Cost			Subcontract	Extended Cost			Subtotal
				Material	Labor	Equipment		Material	Labor	Equipment	
1 Capital Costs											
1.1 LUCs	1	ea			\$9,100.00		\$0	\$0	\$9,100	\$0	\$9,100
1.2 MNA Work Plan											
planning meeting (2 people)	16	hr			\$85.00		\$0	\$0	\$1,360	\$0	\$1,360
analytical specs	16	hr			\$105.00		\$0	\$0	\$1,680	\$0	\$1,680
SAP preparation (Draft/Final)	160	hr			\$85.00		\$0	\$0	\$13,600	\$0	\$13,600
misc supplies, equipment, copying etc.	1	ea		\$500.00			\$0	\$500	\$0	\$0	\$500
1.3 Drilling Subcontractor											
well installation oversight	30	hr			\$85.00		\$0	\$0	\$2,550	\$0	\$2,550
misc supplies, equipment, copying etc.	1	ea		\$1,000.00		\$1,500.00	\$0	\$1,000	\$0	\$1,500	\$2,500
drilling subcontractor	3	day	\$7,550.00				\$22,650	\$0	\$0	\$0	\$22,650
Subtotal							\$22,650	\$1,500	\$28,290	\$1,500	\$53,940
Overhead on Labor Cost @ 30%									\$8,487		\$8,487
G & A on Labor, Material, Equipment, & Subs Cost @ 10%							\$2,265	\$150	\$2,829	\$150	\$5,394
Tax on Materials and Equipment Cost @ 6%								\$90		\$90	\$180
Total Direct Cost							\$2,265	\$240	\$11,316	\$240	\$68,001
Indirects on Total Direct Cost @ 0%											\$0
Profit on Total Direct Cost @ 10%											\$6,800
Subtotal											\$74,801
Health & Safety Monitoring @ 0%											\$0
Total Field Cost											\$74,801
Contingency on Total Field Costs @ 10%											\$7,480
Engineering on Total Field Cost @ 0%											\$0
TOTAL CAPITAL COST											\$82,281

TABLE C2-5
Cost Backup: Annual and Five Year Costs
Groundwater Alternative 2 - LUCs & MNA
Site 12 - Tank Farm 4, DU 4-1
NAVAL STATION (NAVSTA) NEWPORT
NEWPORT, RI

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Item	Item Cost Years 1-2	Item Cost Years 3-30	Item Cost every 5 years	Notes
Annual Site Inspection & Report, Years 1-30	\$2,350	\$2,350		Labor and supplies once a year to inspect Land Use Controls with report
Groundwater Sampling, Analysis and Report (Years 1-2)	\$102,552			LUCs and Monitoring at 14 monitoring wells, Quarterly
Groundwater Sampling, Analysis and Report (Years 3-30)		\$25,638		LUCs and Monitoring at 14 monitoring wells (annually)
Five Year Review			\$23,000	Assumes five year review is a component of the Newport Five Year Review
Subtotal	\$104,902	\$27,988	\$23,000	
Contingency @ 10%	\$10,490	\$2,799	\$2,300	
TOTAL	\$115,392	\$30,787	\$25,300	

**TABLE C2-6
 Cost Backup: Present Worth Cost
 Groundwater Alternative 2 - LUCs & MNA
 Site 12 - Tank Farm 4, DU 4-1
 NAVAL STATION (NAVSTA) NEWPORT
 NEWPORT, RI**

Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate 2.0%	Present Worth
0	\$82,281	\$0	\$82,281	1.000	\$82,281
1		\$115,392	\$115,392	0.980	\$113,130
2		\$115,392	\$115,392	0.961	\$110,911
3		\$30,787	\$30,787	0.942	\$29,011
4		\$30,787	\$30,787	0.924	\$28,442
5		\$56,087	\$56,087	0.906	\$50,800
6		\$30,787	\$30,787	0.888	\$27,338
7		\$30,787	\$30,787	0.871	\$26,802
8		\$30,787	\$30,787	0.853	\$26,276
9		\$30,787	\$30,787	0.837	\$25,761
10		\$56,087	\$56,087	0.820	\$46,011
11		\$30,787	\$30,787	0.804	\$24,761
12		\$30,787	\$30,787	0.788	\$24,275
13		\$30,787	\$30,787	0.773	\$23,799
14		\$30,787	\$30,787	0.758	\$23,333
15		\$56,087	\$56,087	0.743	\$41,673
16		\$30,787	\$30,787	0.728	\$22,427
17		\$30,787	\$30,787	0.714	\$21,987
18		\$30,787	\$30,787	0.700	\$21,556
19		\$30,787	\$30,787	0.686	\$21,133
20		\$56,087	\$56,087	0.673	\$37,745
21		\$30,787	\$30,787	0.660	\$20,312
22		\$30,787	\$30,787	0.647	\$19,914
23		\$30,787	\$30,787	0.634	\$19,524
24		\$30,787	\$30,787	0.622	\$19,141
25		\$56,087	\$56,087	0.610	\$34,187
26		\$30,787	\$30,787	0.598	\$18,398
27		\$30,787	\$30,787	0.586	\$18,037
28		\$30,787	\$30,787	0.574	\$17,683
29		\$30,787	\$30,787	0.563	\$17,336
30		\$56,087	\$56,087	0.552	\$30,964
TOTAL PRESENT WORTH					\$1,044,946

Table C2-7
Cost Backup - Capital Cost
Site 12 - Decision Unit 4-1 at Tank Farm 4
Alternative GW3: In-Situ Bioprecipitation, Monitoring, and LUCs
NAVAL STATION (NAVSTA) NEWPORT

Item	Quantity	Unit	Subcontract	Unit Cost			Subcontract	Extended Cost			Subtotal
				Material	Labor	Equipment		Material	Labor	Equipment	
A LUCs and Monitoring											
1 LUCs, LUC RD	1	ea			\$9,100.00		\$0	\$0	\$9,100	\$0	\$9,100
2.1 LTM Work Plan	192	hr			\$91.00		\$0	\$0	\$17,472	\$0	\$17,472
2.2 misc supplies, equipment, copying etc.	1	ea		\$500.00			\$0	\$500	\$0	\$0	\$500
2.3 well installation oversight	30	hr			\$85.00		\$0	\$0	\$2,550	\$0	\$2,550
2.4 misc supplies, equipment, copying etc.	1	ea		\$1,000.00		\$1,500.00	\$0	\$1,000	\$0	\$1,500	\$2,500
2.5 Subcontract Drilling	3	day	\$7,550.00				\$22,650	\$0	\$0	\$0	\$22,650
B IN SITU TREATMENT											
1 PROJECT PLANNING & DOCUMENTS											
1.1 Design	1	ls	\$4,000.00				\$4,000	\$0	\$0	\$0	\$4,000
1.2 Design Documents	200	hr			\$39.00		\$0	\$0	\$7,800	\$0	\$7,800
1.3 Prepare Documents & Plans including Permits	350	hr			\$39.00		\$0	\$0	\$13,650	\$0	\$13,650
2 MOBILIZATION AND DEMOBILIZATION											
2.1 Site Support Facilities (trailers, phone, electric, etc.)	1	ls	\$560.00	\$1,000.00	\$200.00	\$3,500.00	\$560	\$1,000	\$200	\$3,500	\$5,260
2.2 Equipment Mobilization/Demobilization	2	ea			\$188.00	\$566.00	\$0	\$0	\$376	\$1,132	\$1,508
2.3 Drill Rig Mobilization/Demobilization	2	ea	\$2,000.00				\$4,000	\$0	\$0	\$0	\$4,000
3 SITE SUPPORT											
3.1 Office Trailer	3.0	mo				\$365.00	\$0	\$0	\$0	\$1,095	\$1,095
3.2 Field Office Equipment, Utilities, & Support	3.0	mo		\$380.00			\$0	\$1,140	\$0	\$0	\$1,140
3.3 Storage Trailer	3.0	mo				\$94.00	\$0	\$0	\$0	\$282	\$282
3.4 Survey Support	5	day	\$1,150.00				\$5,750	\$0	\$0	\$0	\$5,750
3.5 Site Superintendent	60	day		\$220.00	\$480.00		\$0	\$13,200	\$28,800	\$0	\$42,000
3.6 Site Health & Safety and QA/QC (1/2 time)	30	day		\$220.00	\$360.00		\$0	\$6,600	\$10,800	\$0	\$17,400
3.7 Site Labor, (2 laborers)	120	day			\$280.80		\$0	\$0	\$33,696	\$0	\$33,696
4 DECONTAMINATION											
4.1 Decontamination Services	3	mo		\$1,220.00	\$2,245.00	\$1,550.00	\$0	\$3,660	\$6,735	\$4,650	\$15,045
4.2 Equipment Decon Pad	1	ls		\$4,500.00	\$3,000.00	\$725.00	\$0	\$4,500	\$3,000	\$725	\$8,225
4.3 Decon Water	4,000	gal		\$0.20			\$0	\$800	\$0	\$0	\$800
4.4 Decon Water Storage Tank, 6,000 gallon	3	mo				\$813.00	\$0	\$0	\$0	\$2,439	\$2,439
4.5 Clean Water Storage Tank, 4,000 gallon	3	mo				\$731.00	\$0	\$0	\$0	\$2,193	\$2,193
4.6 Disposal of Decon Waste (liquid & solid)	3	mo	\$985.00				\$2,955	\$0	\$0	\$0	\$2,955
5 PILOT STUDY											
5.1 Pilot Scale Work Plan	1	ls			\$15,000.00		\$0	\$0	\$15,000	\$0	\$15,000
5.2 Injection Well Installation (20)	400	lf	\$40.00				\$16,000	\$0	\$0	\$0	\$16,000
5.3 Injection Well Heads	20	ea	\$150.00				\$3,000	\$0	\$0	\$0	\$3,000
5.4 Injection Labor/Equipment	5	day	\$4,000.00				\$20,000	\$0	\$0	\$0	\$20,000
5.5 Nutrient	2,000	lb		\$3.51			\$0	\$7,020	\$0	\$0	\$7,020
5.6 Injection Water	2,000	gal		\$0.20			\$0	\$400	\$0	\$0	\$400
5.7 Water Tank Truck	5	day				\$430.00	\$0	\$0	\$0	\$2,150	\$2,150
5.8 Skid-Steer	5	day			\$358.00	\$281.20	\$0	\$0	\$1,790	\$1,406	\$3,196
5.9 IDW Disposal	16	drum	\$200.00				\$3,200	\$0	\$0	\$0	\$3,200
5.10 Pavement Coring & Repair	0	ea	\$90.00				\$0	\$0	\$0	\$0	\$0

Table C2-7
Cost Backup - Capital Cost
Site 12 - Decision Unit 4-1 at Tank Farm 4
Alternative GW3: In-Situ Bioprecipitation, Monitoring, and LUCs
NAVAL STATION (NAVSTA) NEWPORT

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Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal	
				Material	Labor	Equipment	Subcontract	Material	Labor		Equipment
6 FULL TREATMENT											
6.1 Injection Well Installation (60)	1,200	lf	\$40.00				\$48,000	\$0	\$0	\$0	\$48,000
6.2 Injection Well Heads	60	ea	\$150.00				\$9,000	\$0	\$0	\$0	\$9,000
6.3 Injection Labor/Equipment	30	day	\$4,000.00				\$120,000	\$0	\$0	\$0	\$120,000
6.4 Nutrient	5,000	lb		\$3.51			\$0	\$17,550	\$0	\$0	\$17,550
6.5 Injection Water	5,000	gal		\$0.20			\$0	\$1,000	\$0	\$0	\$1,000
6.6 Water Tank Truck	30	day				\$430.00	\$0	\$0	\$0	\$12,900	\$12,900
6.7 Skid-Steer	30	day			\$358.00	\$281.20	\$0	\$0	\$10,740	\$8,436	\$19,176
6.8 IDW Disposal	50	drum	\$200.00				\$10,000	\$0	\$0	\$0	\$10,000
6.9 Road access/brush clearing	5	day	\$550.00				\$2,750	\$0	\$0	\$0	\$2,750
6.10 Site Restoration (grade, seed)	12.0	msf	\$96.50				\$1,158	\$0	\$0	\$0	\$1,158
6.11 Post-Injection Sampling Labor, 2 events	100	hr			\$39.00		\$0	\$0	\$3,900	\$0	\$3,900
6.12 Post-Injection Sampling ODCs	28	ea		\$500.00			\$0	\$14,000	\$0	\$0	\$14,000
6.13 Post-Injection Analysis	28	ea	\$1,000.00				\$28,000	\$0	\$0	\$0	\$28,000
6.14 Post-Injection Report	80	hr			\$39.00		\$0	\$0	\$3,120	\$0	\$3,120
7 POST CONSTRUCTION COST											
7.1 Contractor Completion Report	150	hr			\$39.00		\$0	\$0	\$5,850	\$0	\$5,850
7.2 Remedial Action Closeout Report	200	hr			\$39.00		\$0	\$0	\$7,800	\$0	\$7,800
Subtotal							\$301,023	\$72,370	\$182,379	\$42,408	\$598,180
Overhead on Labor Cost @ 30%									\$54,714		\$54,714
G & A on Cost @ 10%							\$30,102	\$7,237	\$18,238	\$4,241	\$59,818
Tax on Materials and Equipment Cost @ 7%								\$5,066		\$2,969	\$8,034
Total Direct Cost							\$331,125	\$84,673	\$255,331	\$49,617	\$720,746
Indirects on Total Direct Cost @ 20%											\$144,149
Profit on Total Direct Cost @ 10%											\$72,075
Total Field Cost											\$936,970
Engineering on Total Field Costs @ 10%											\$93,697
Contingency on Total Field Costs @ 15%											\$140,546
TOTAL CAPITAL COST (INITIAL TREATMENT)											\$1,171,213

Table C2-8
Cost Backup - Capital Cost (Second Injection)
Site 12 - Decision Unit 4-1 at Tank Farm 4
Alternative GW3: In-Situ Bioprecipitation, Monitoring, and LUCs
NAVAL STATION (NAVSTA) NEWPORT

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Item	Quantity	Unit	Subcontract	Unit Cost			Extended Cost			Subtotal	
				Material	Labor	Equipment	Subcontract	Material	Labor		Equipment
1 PROJECT PLANNING & DOCUMENTS											
1.1 Design Documents	100	hr			\$39.00		\$0	\$0	\$3,900	\$0	\$3,900
1.2 Prepare Documents & Plans including Permits	150	hr			\$39.00		\$0	\$0	\$5,850	\$0	\$5,850
2 MOBILIZATION AND DEMOBILIZATION											
2.1 Site Support Facilities (trailers, phone, electric, etc.)	1	ls		\$1,000.00		\$3,500.00	\$0	\$1,000	\$0	\$3,500	\$4,500
2.2 Equipment Mobilization/Demobilization	2	ea			\$183.00	\$518.00	\$0	\$0	\$366	\$1,036	\$1,402
3 SITE SUPPORT											
3.1 Office Trailer	2.0	mo				\$365.00	\$0	\$0	\$0	\$730	\$730
3.2 Field Office Equipment, Utilities, & Support	2.0	mo		\$380.00			\$0	\$760	\$0	\$0	\$760
3.3 Storage Trailer	2.0	mo				\$94.00	\$0	\$0	\$0	\$188	\$188
3.4 Site Superintendent	40	day		\$220.00	\$480.00		\$0	\$8,800	\$19,200	\$0	\$28,000
3.5 Site Labor, (2 laborers)	80	day			\$280.80		\$0	\$0	\$22,464	\$0	\$22,464
4 DECONTAMINATION											
4.1 Decontamination Services	2	mo		\$1,220.00	\$2,245.00	\$1,550.00	\$0	\$2,440	\$4,490	\$3,100	\$10,030
4.2 Equipment Decon Pad	0	ls		\$4,500.00	\$3,000.00	\$725.00	\$0	\$0	\$0	\$0	\$0
4.3 Decon Water	2,000	gal		\$0.20			\$0	\$400	\$0	\$0	\$400
4.4 Decon Water Storage Tank, 6,000 gallon	2	mo				\$813.00	\$0	\$0	\$0	\$1,626	\$1,626
4.5 Clean Water Storage Tank, 4,000 gallon	2	mo				\$731.00	\$0	\$0	\$0	\$1,462	\$1,462
4.6 Disposal of Decon Waste (liquid & solid)	2	mo	\$985.00				\$1,970	\$0	\$0	\$0	\$1,970
5 SECOND TREATMENT											
5.1 Injection Labor/Equipment	30	day	\$4,000.00				\$120,000	\$0	\$0	\$0	\$120,000
5.2 Nutrient	7,000	lb		\$3.51			\$0	\$24,570	\$0	\$0	\$24,570
5.3 Injection Water	7,000	gal		\$0.20			\$0	\$1,400	\$0	\$0	\$1,400
5.4 Water Tank Truck	20	day				\$430.00	\$0	\$0	\$0	\$8,600	\$8,600
5.5 Skid-Steer	20	day			\$358.00	\$281.20	\$0	\$0	\$7,160	\$5,624	\$12,784
5.6 IDW Disposal	50	drum	\$200.00				\$10,000	\$0	\$0	\$0	\$10,000
5.7 Contractor Completion Report	150	hr			\$39.00		\$0	\$0	\$5,850	\$0	\$5,850
Subtotal							\$131,970	\$39,370	\$69,280	\$25,866	\$266,486
Overhead on Labor Cost @ 30%									\$20,784		\$20,784
G & A on Cost @ 10%							\$13,197	\$3,937	\$6,928	\$2,587	\$26,649
Tax on Materials and Equipment Cost @ 7%								\$2,756		\$1,811	\$4,567
Total Direct Cost							\$145,167	\$46,063	\$96,992	\$30,263	\$318,485
Indirects on Total Direct Cost @ 20%											\$63,697
Profit on Total Direct Cost @ 10%											\$31,849
Total Field Cost											\$414,031
Engineering on Total Field Costs @ 2%											\$8,281
Contingency on Total Field Costs @ 10%											\$41,403
TOTAL CAPITAL COST (Second Injection)											\$463,714

Table C2-9
Cost Backup - Annual Cost
Site 12 - Decision Unit 4-1 at Tank Farm 4
Alternative GW3: In-Situ Bioprecipitation, Monitoring, and LUCs
NAVAL STATION (NAVSTA) NEWPORT

5/1/2013 1:33 PM

Item	Item Cost Years 0 & 1	Item Cost Years 2 & 3	Item Cost Years 4 - 30	Item Cost Five Year Cost	Notes
Groundwater LTM	\$102,552	\$102,552	\$25,638	\$0	Labor and supplies for groundwater samples using a crew of three.
LUC Inspection & Report	\$2,350	\$2,350	\$2,350	\$0	
Five Year Review	NA	NA	NA	\$23,000	Five year reviews are are required until LTM shows that RGs are met.
Subtotal	\$104,902	\$104,902	\$27,988	\$23,000	
Contingency @ 10%	\$10,490	\$10,490	\$2,799	\$2,300	
TOTAL	\$115,392	\$115,392	\$30,787	\$25,300	

LTM during Years 1-4 are currently assumed to be the same effort, however, this may change after Design and Pilot Study

Table C2-10
Cost Backup - Present Worth Cost
Site 12 - Decision Unit 4-1 at Tank Farm 4
Alternative GW3: In-Situ Bioprecipitation, Monitoring, and LUCs
NAVAL STATION (NAVSTA) NEWPORT

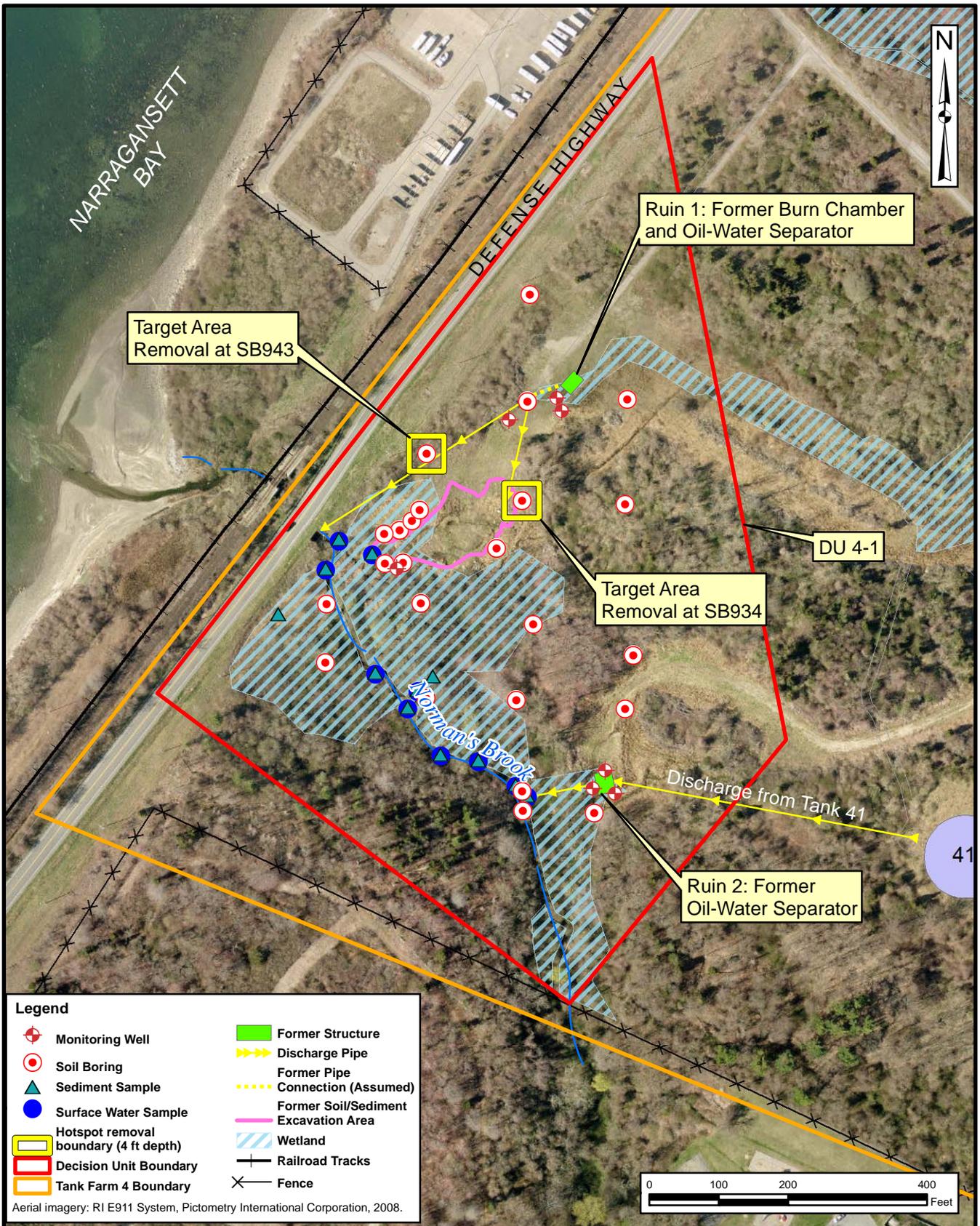
Year	Capital Cost	Annual Cost	Total Year Cost	Annual Discount Rate 2.0%	Present Worth
0	\$1,171,213	\$115,392	\$1,171,213	1.000	\$1,286,605
1		\$115,392	\$115,392	0.980	\$113,130
2	\$463,714	\$115,392	\$579,107	0.961	\$556,619
3		\$115,392	\$115,392	0.942	\$108,737
4		\$30,787	\$30,787	0.924	\$28,442
5		\$56,087	\$56,087	0.906	\$50,800
6		\$30,787	\$30,787	0.888	\$27,338
7		\$30,787	\$30,787	0.871	\$26,802
8		\$30,787	\$30,787	0.853	\$26,276
9		\$30,787	\$30,787	0.837	\$25,761
10		\$56,087	\$56,087	0.820	\$46,011
11		\$30,787	\$30,787	0.804	\$24,761
12		\$30,787	\$30,787	0.788	\$24,275
13		\$30,787	\$30,787	0.773	\$23,799
14		\$30,787	\$30,787	0.758	\$23,333
15		\$56,087	\$56,087	0.743	\$41,673
16		\$30,787	\$30,787	0.728	\$22,427
17		\$30,787	\$30,787	0.714	\$21,987
18		\$30,787	\$30,787	0.700	\$21,556
19		\$30,787	\$30,787	0.686	\$21,133
20		\$56,087	\$56,087	0.673	\$37,745
21		\$30,787	\$30,787	0.660	\$20,312
22		\$30,787	\$30,787	0.647	\$19,914
23		\$30,787	\$30,787	0.634	\$19,524
24		\$30,787	\$30,787	0.622	\$19,141
25		\$56,087	\$56,087	0.610	\$34,187
26		\$30,787	\$30,787	0.598	\$18,398
27		\$30,787	\$30,787	0.586	\$18,037
28		\$30,787	\$30,787	0.574	\$17,683
29		\$30,787	\$30,787	0.563	\$17,336
30		\$56,087	\$56,087	0.552	\$30,964
TOTAL PRESENT WORTH					\$2,774,703

Assumes one retreatment period in year 2. Other treatment periods may be required.
 Annual cost in year 0 is for establishing baseline groundwater conditions, four rounds of LTM.
 Cost basis assumes that two treatments will attain RGs, and LTM will be discontinued.

C3 – VOLUME ESTIMATES FOR SOIL AND GROUNDWATER



<ul style="list-style-type: none"> ● Soil Boring where at least one industrial PRG was exceeded ● Soil Boring where no industrial PRGs were exceeded Decision Unit Boundary Discharge Pipe Former Soil/Sediment Excavation Area Wetland Railroad Tracks Fence Estimated Soil Exceeding Criteria 	<p>0 100 200 300 Feet</p> <p style="text-align: center;">APPENDIX C-3-1 ESTIMATED INDUSTRIAL SOIL CRITERIA EXCEEDANCE AREA DU 4-1, TANK FARM 4 FEASIBILITY STUDY REPORT NAVSTA NEWPORT NEWPORT, RHODE ISLAND</p> <p>Date: 7/16/2012 Author: MJH</p>	<p style="text-align: right;">N</p> <p style="text-align: right;">Tt TETRA TECH</p>
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- Legend**
- Monitoring Well
 - Soil Boring
 - Sediment Sample
 - Surface Water Sample
 - Hotspot removal boundary (4 ft depth)
 - Decision Unit Boundary
 - Tank Farm 4 Boundary
 - Former Structure
 - Discharge Pipe
 - Former Pipe
 - Connection (Assumed)
 - Former Soil/Sediment Excavation Area
 - Wetland
 - Railroad Tracks
 - Fence

Aerial imagery: RI E911 System, Pictometry International Corporation, 2008.



NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

REMEDIAL ACTION AREAS FOR SOIL, DU 4-1

DU 4-1, SITE 12 - TANK FARM 4
FEASIBILITY STUDY

SCALE PER-SCALE BAR	
FILE	
I:\DU4-1_HOTSPOT.MXD	
REV	DATE
0	07/16/12
FIGURE NUMBER	
4-1	

TABLE C-3.1
VOLUME OF GROUNDWATER, DU 4-1
TANK FARM 4, PORTSMOUTH RHODE ISLAND
APPENDIX C

Volume of Groundwater in DU - Estimate using average saturated thickness (B) of each unit

DU 4-1	AREA OF DU (FT2)	AVG B (FT)	POROSITY	WATER (FT3)	WATER (GAL)
shale	609,840	13	0.05	396,396	2,965,042
sandy gravel	609,840	2	0.35	426,888	3,193,122
sandy silt	609,840	8.86	0.4	2,160,576	16,161,108
TOTAL =				2,983,860	22,319,273

Volume of Groundwater in DU - Estimate using maximum saturated thickness (B) of each unit

DU 4-1	AREA OF DU (FT2)	MAX B (ft.)	POROSITY	VOLUME (FT3)	VOLUME(GAL)
shale	609,840	30	0.05	914,760	6,842,405
sandy gravel	609,840	2	0.35	426,888	3,193,122
sandy silt	609,840	18	0.4	4,390,848	32,843,543
TOTAL =				5,732,496	42,879,070

Notes:

- 1) porosity taken from Freeze and Cherry, 1979
- 2) area of each DU taken from data gaps report: DU4-1 is 14 acres and DU5-1 is 6 acres
- 3) B of shale taken as distance between top of fractured/ weatherd shale and the bottom of the well

TABLE C-3.2
VOLUME OF SOIL EXCEEDING PRGS, DU 4-1
TANK FARM 4, PORTSMOUTH RHODE ISLAND
APPENDIX C

	Area (Ft ²)	Avg Depth (ft)	Volume (ft ³)	Volume (yd ³)	Weight (tons)
INDUSTRIAL	134,831	8.2	1,105,614	40,949	49,138.4
RESIDENTIAL	288,542	7.6	2,202,031	81,557	97,868.0

Notes:

Average depth is the average of depth to competent bedrock at borings within the exceedance polygon

1.2 tons per cubic yard of soil/fill assumed