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FINAL REMEDIAL INVESTIGATION REPORT FOR GROUNDWATER AT SITES 8 AND 34

NWS YORKTOWN VA

07/01/2011

CH2M HILL

Final

Remedial Investigation Report for Groundwater at Sites 8 and 34

Naval Weapons Station Yorktown

Yorktown, Virginia

Prepared for

Department of the Navy

Naval Facilities Engineering Command Mid-Atlantic

Contract No. N62470-02-D-3052
CTO-220

July 2011

Prepared by

CH2MHILL.

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Naval Weapons Station Yorktown
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Contract Task Order 220

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Under the

NAVFAC CLEAN III Program
Contract N62470-02-D-3052

Prepared by

CH2MHILL

Virginia Beach, Virginia

Executive Summary Table

Executive Summary Table
Remedial Investigation for Groundwater at Sites 8 and 34, Naval Weapons Station Yorktown, Yorktown, Virginia

Site	Further Action	NFA	Rationale
Site 8 Groundwater	**X**		Additional action is necessary to address chlorinated volatiles organic compounds (VOCs) and explosives which either pose risk or exceed maximum contaminant levels (MCLs) at this site.
Site 8 Surface Water/Sediment		**X**	No unacceptable risks associated with surface water or sediment are present.
Site 34 Groundwater	**X**		Additional action is necessary to address chlorinated ethenes in groundwater.
Site 34 Surface Water/Sediment		**X**	No unacceptable risks associated with surface water or sediment are present

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Acronyms and Abbreviations

AF	attenuation factor
amsl	above mean sea level
AUF	area use factor
AVS/SEM	acid volatile sulfide/simultaneously extractable metals
AWQC	Ambient Water Quality Criteria
BAF	bioaccumulation factor
BCF	bioconcentration factor
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
BTAG	Biological and Technical Assistance Group
cells/mL	cells per milliliter
CLEAN	Comprehensive Long-term Environmental Action—Navy
CLP	Contract Laboratory Procedure
COC	chemical of concern
COPC	chemical of potential concern
CR	carcinogenic risk
CSF	carcinogenic slope factor
CSM	conceptual site model
CTE	central tendency exposure
CTO	Contract Task Order
DCE	dichloroethene
DHC	*Dehalococcoides* sp.
DI	deionized
DNT	dinitrotoluene
DNX	hexahydro-1,3-dinitroso-5-nitro-1,3,5-triazine
DO	dissolved oxygen
DPT	direct push technology
DQO	data quality objective
ECD	electron capture device
EE/CA	Engineering Evaluation/Cost Analysis
ELCR	excess lifetime carcinogenic risk
EPC	exposure point concentration
ERA	Ecological Risk Assessment
ESQD	explosive safety quantity distance
ESS	Explosives Safety Submission
FFA	Federal Facilities Agreement
FID	flame ionization detector
ft	feet, foot
ft/day	feet per day

HI	hazard index
HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HMX	octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
HQ	hazard quotient
HRSD	Hampton Roads Sanitation District
IAS	Initial Assessment Study
ID	inner diameter
IDW	investigation-derived waste
IR	Installation Restoration
IRIS	Integrated Risk Information System
LOAEL	lowest observed adverse effects level
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
MATC	maximum acceptable toxicant concentration
MCL	maximum contaminant level
MF	modifying factor
mg/kg	milligrams per kilogram
mg/kg-BW/day	milligrams per kilogram of body weight per day
mg/L	milligrams per liter
MIP	membrane interface probe
MNX	hexahydro-1,3,5-trinitro-1,3,5-trinitroso-1,3,5-triazine
MS	matrix spike
mS/cm	milliSiemens per centimeter
MSD	matrix spike duplicate
mV	millivolt
NAVFAC	Naval Facilities Engineering Command
Navy	United States Navy
NCEA	National Center for Environmental Assessment
NEDED	Naval Explosives Development Engineering Department
NERP	Navy Environmental Restoration Program
NOAEL	no observed adverse effects level
NPDES	National Pollutant Discharge Elimination System
NTCRA	Non-time-critical Removal Action
ORP	oxidation-reduction potential
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PID	photoionization detector
PPRTV	provisional peer reviewed toxicity values
ppt	parts per thousand
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control

RAGS	Risk Assessment Guidance for Superfund
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
Rfd	reference dose
RI	Remedial Investigation
RME	reasonable maximum exposure
RSL	Regional Screening Level
SERA	Screening Ecological Risk Assessment
SMDP	Scientific Management Decision Point
SSA	Site Screening Area
SVOC	semivolatile organic compound
TAL	Target Analyte List
TCA	trichloroethane
TCE	trichloroethene
TCL	target compound list
TCLP	toxicity characteristic leachate procedure
TNT	trinitrotoluene
TNX	hexahydro-1,3,5-trinitro-1,3,5-trinitroso-1,3,5-triazine
TOC	total organic compound
UCL	upper confidence limit
UF	uncertainty factor
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VDEQ	Virginia Department of Environmental Quality
VOC	volatile organic compound
VRP	voluntary remediation program
WPNSTA	Naval Weapons Station

SECTION 1

Introduction

This report presents data, results, and conclusions of the Remedial Investigation (RI) activities conducted to support characterization of groundwater, surface water, and sediment at Naval Environmental Restoration Program (NERP) Installation Restoration (IR) Site 8 (Naval Explosives Development Engineering Department [NEDED] Explosives Contaminated Wastewater Discharge Area) and Site 34 (Building 537 Discharge to Felgates Creek), Naval Weapons Station (WPNSTA) Yorktown, Yorktown, Virginia. This report was prepared under the United States Navy (Navy), Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic, Comprehensive Long-term Environmental Action—Navy (CLEAN) III, Contract N62470-02-D-3052, Contract Task Order (CTO) 0195.

Previously, removal actions in 2007 have been taken at Site 8 and Site 34 (previously Site Screening Area [SSA] 14) to address source area soil and sediment contamination. The results of these removal actions are documented in *Draft Construction Completion Report Site 8 and SSA 14, Naval Weapons Station Yorktown, Yorktown, Virginia* (Shaw, 2008). However, potential impacts to groundwater from these former source areas as well as potential transport in groundwater to nearby surface water bodies were not addressed during these previous actions. Consequently, the purpose of this RI is to address these media.

RI field activities were initiated in March 2007 and were completed in September 2008. Field activities were conducted in accordance with the *Final Remedial Investigation Work Plan for Groundwater at Sites 4, 8, 21, 22, and SSA 14, Naval Weapons Station Yorktown, Yorktown, Virginia* (CH2M HILL, 2007). The technical approach included in the Work Plan was agreed to by the WPNSTA Yorktown Tier I Partnering Team, which includes representatives from the Navy, United States Environmental Protection Agency Region 3 (USEPA), and Virginia Department of Environmental Quality (VDEQ). This RI was also conducted in accordance with the *Federal Facility Agreement for Naval Weapons Station Yorktown, Yorktown, Virginia* (USEPA, 1994a), the *Final Master Project Plans, Naval Weapons Station Yorktown, Yorktown, Virginia, and Cheatham Annex, Williamsburg, Virginia* (Baker, 2005a), and applicable federal, Commonwealth of Virginia, and local regulations and requirements.

1.1 Objectives and Approach

This RI report presents the findings of the RI and utilizes these data in addition to existing data to develop recommendations for an appropriate path forward at each site. The specific objectives of this RI are to:

- Determine the nature and extent of groundwater, surface water, and sediment contamination at Sites 8 and 34
- Calculate risks to current and future human and ecological receptors associated with exposure to groundwater, surface water, and sediment at these sites

- Determine likely fate and transport mechanisms associated with site contaminants
- Determine an appropriate path forward for each site

1.2 Report Organization

This report is organized into 11 sections. Section 2 of this document discusses basewide historical information and physical characteristics applicable to both sites. Section 3 provides information on field methods used at the sites. Sections 4 (Site 8) and 5 (Site 34) provide site-specific evaluations for groundwater at each site. Section 6 presents information regarding impacts to the surface water bodies adjacent to the sites. Section 7 presents the Human Health Risk Assessments (HHRAs). Section 8 presents the Ecological Risk Assessment (ERA). Section 9 presents the conceptual site model (CSM) and fate and transport mechanisms for contaminants posing risk and Section 10 presents conclusions and recommendations. References are included in Section 11.

Tables and Figures are provided at the end of each respective section. Appendices are provided after Section 11.

SECTION 2

History and Physical Characteristics

This section presents a brief summary of the background and physical setting of WPNSTA Yorktown and a description of the general physical setting of the sites.

2.1 WPNSTA Yorktown Description and History

WPNSTA Yorktown is a 10,624-acre installation located on the Virginia Peninsula in York and James City Counties and the City of Newport News, Virginia (**Figure 2-1**). WPNSTA Yorktown is bounded on the northwest by WPNSTA Yorktown Cheatham Annex and the King's Creek Commerce Center; on the northeast by the York River and the Colonial National Historic Parkway; on the southwest by Route 143 and Interstate 64; and on the southeast by Route 238 and the town of Lackey.

Originally named the U.S. Mine Depot, WPNSTA Yorktown was established in 1918 to support the laying of mines in the North Sea during World War I. For 20 years after World War I, the depot continued to receive, reclaim, store, and issue mines, depth charges, and related materials. During World War II, the facility was expanded to include three trinitrotoluene (TNT) loading plants and new torpedo overhaul facilities. A research and development laboratory for experimentation with high explosives was established in 1944. In 1947, a quality evaluation laboratory was developed to monitor special tasks assigned to the facility which included the design and development of depth charges and advanced underwater weapons. On August 7, 1959, the depot was renamed the U.S. Naval Weapons Station. Today, the primary mission of WPNSTA Yorktown is to provide ordnance, technical support, and related services to sustain the war-fighting capability of the armed forces in support of national military strategy.

The locations of Site 8 and Site 34 are shown on **Figure 2-1**. Site-specific descriptions and historical information are provided in Sections 4 (Site 8) and 5 (Site 34).

2.2 Physical Characteristics

2.2.1 WPNSTA Yorktown Geology

WPNSTA Yorktown is situated within the Virginia Coastal Plain Physiographic Province. The Virginia Coastal Plain is characterized by unconsolidated sediments of Quaternary, Tertiary, and Cretaceous ages (beginning 145 million years ago). The sediments thicken eastward from the Fall Line (approximately 70 miles west of WPNSTA) and are approximately 6,000 feet (ft) thick below the Eastern Shore Peninsula according to *Hydrogeologic Framework of the Virginia Coastal Plain* (Meng and Harsh, 1988).

The topographic surface of the Virginia Coastal Plain consists of a series of broad, gently sloping terraces separated by scarps (eroded bluffs) formed by depositional and erosional processes resulting from fluctuating sea levels during the past 2 to 3 million years according to *Geohydrology of the Shallow Aquifer System* (Brockman et al., 1997). The terraces decrease in topographic elevation in a stair-step pattern from approximately 100 ft above mean sea level

(amsl) in areas close to the Fall Line to just above sea level in the proximity of Virginia's modern day coastal oceans and rivers. Scarps, predominantly oriented from north to south, delineate the eroded shoreline along the toe of each terrace. Two terraces (Lackey Plain and Croaker Flat) are divided by one scarp (the Camp Peary Scarp) within the boundaries of WPNSTA Yorktown. Sites 8 and 34 are located on the lower terrace, Croaker Flat (**Figure 2-1**).

2.2.2 WPNSTA Yorktown Hydrogeology

The geologic units described above were grouped into hydrostratigraphic units based upon their hydrologic characteristics in *Groundwater Resources of the York-James Peninsula of Virginia, USGS Water Resources Investigation Report* (Lazniak and Meng, 1988) and the *Geohydrology of the Shallow Aquifer System* (Brockman et al., 1997). Based upon the hydraulic characteristics of the geologic units present, the uppermost eight (Cobham Bay Member of the Eastover Formation through the Tabb Formation) of the ten geologic formations have been identified as the York County Shallow Aquifer System (Brockman et al., 1997). As illustrated in **Figure 2-2**, the Croaker Flat is generally underlain by three hydrogeologic units within the York County Shallow Aquifer System:

- Columbia aquifer
- Yorktown confining unit
- Yorktown-Eastover aquifer

2.2.3 Study Area Hydrogeology

In the vicinity of Sites 8 and 34 on the Croaker Flat, the Columbia aquifer is absent, and the hydrogeologic sequence generally consists of the clay and silt of the Yorktown confining unit from the ground surface to 10–20 ft below ground surface (bgs). This unit is underlain by the Yorktown-Eastover aquifer consisting of medium to coarse sand with shell hash. At Site 34, an approximately 10-ft thick silty or clayey lens is present at approximately 40 ft bgs and extends across much of the site. Depth to groundwater in the Sites 8 and 34 areas ranges from 6 to 12 ft bgs. Based on the U.S. Geological Survey (USGS) study conducted as WPNSTA Yorktown (Brockman et al., 1997), the Yorktown-Eastover aquifer is approximately 80 ft thick in the vicinity of these sites.

The sites included in this report are situated along the Eastern Branch of Felgates Creek and its unnamed tributary. The Eastern Branch of Felgates Creek lies directly north of the Camp Peary Scarp. Felgates Creek is a tidally influenced tributary to the York River. Groundwater flow from the sites is generally toward the creek. Surface water runoff is directed toward the creek and its tributaries, and in some cases, drainage ditches on the sites. Flow within the Eastern Branch of Felgates Creek reverses due to tidal fluctuation. The positions of Sites 8 and 34 along the creek are illustrated on **Figure 2-1**.

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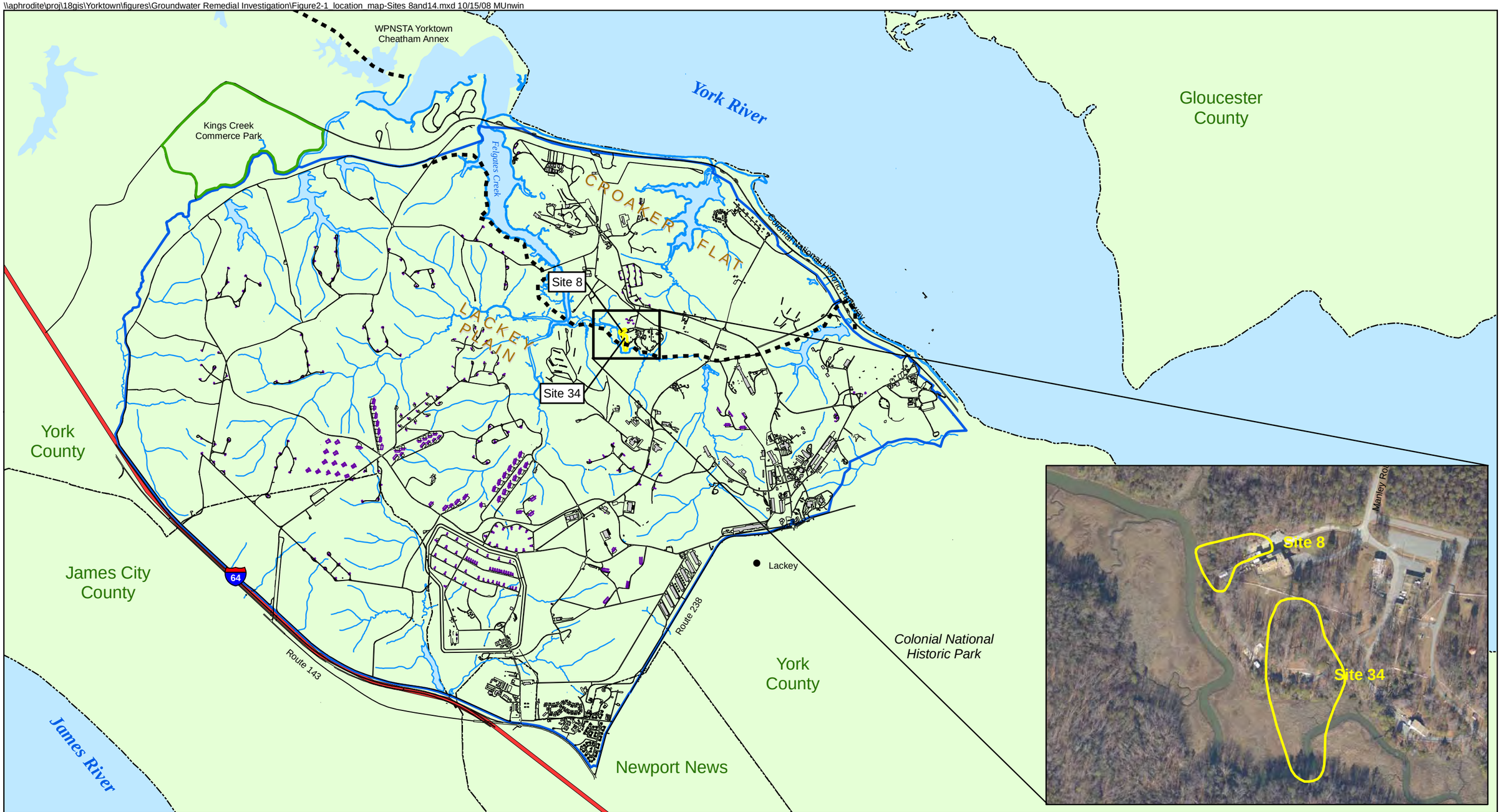

Legend

- Yorktown Naval Weapons Station Base Boundary
- Study Areas*
- Buildings and Structures
- Interstate 64
- Magazines
- Shoreline and Water Bodies
- Camp Peary Scarp
- Kings Creek Commerce Center
- County Lines

*All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

N

0 1,750 3,500 7,000 Feet

Figure 2-1
Sites 8 and 34 Location Map
Groundwater Remedial Investigation Report
for Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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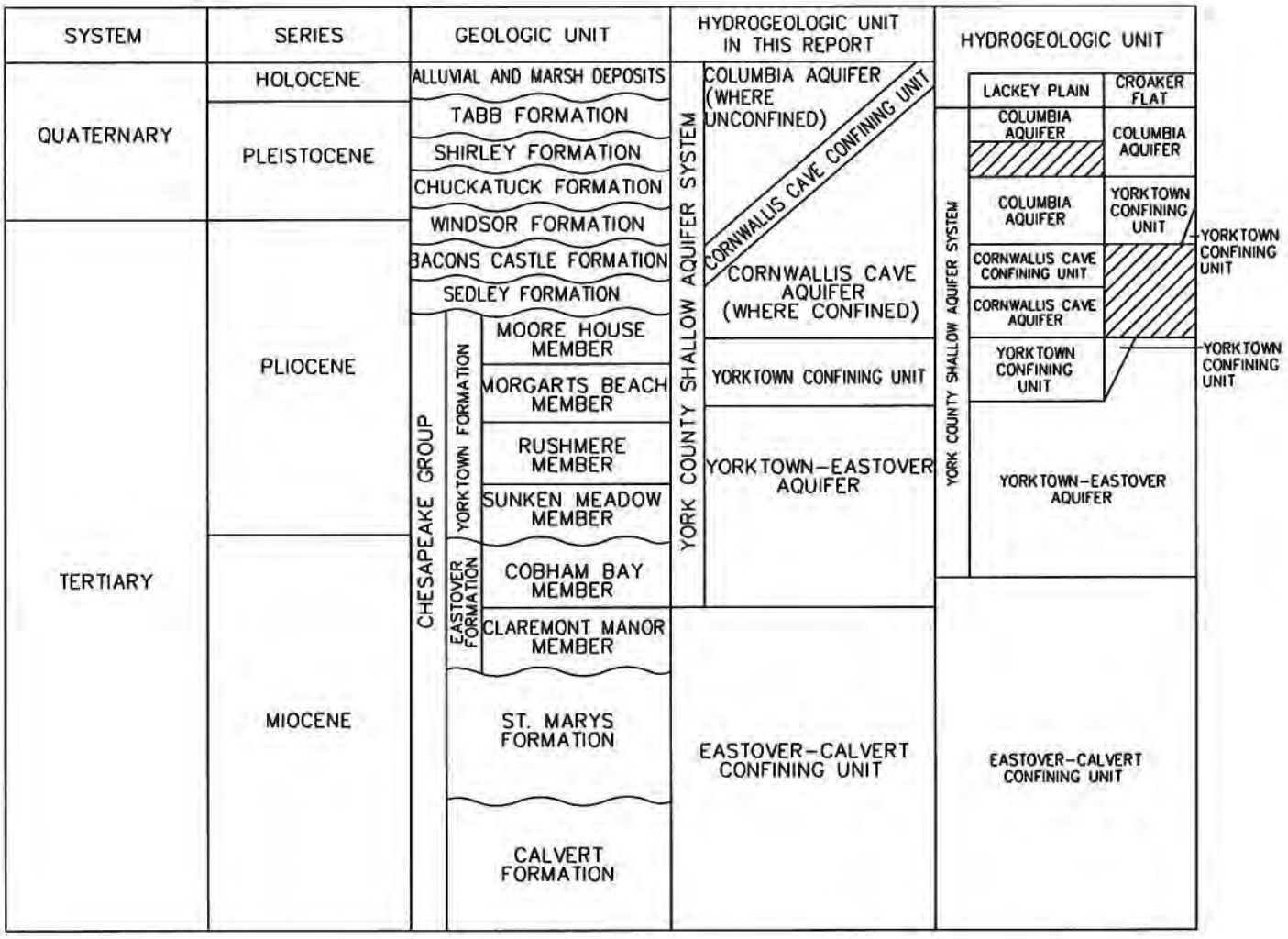

Source: Brockman, ET AL 1997 GEOHYDROLOGY OF THE SHALLOW AQUIFER SYSTEM, NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Figure 2-2
Hydrogeologic Units in York County
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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SECTION 3

Field Investigation Methods

Field activities were conducted at Sites 8 and 34 from March 2007 to April 2008. These activities included a membrane interface probe (MIP) study at Site 34 only, a direct push technology (DPT) investigation, monitoring well installation and development, groundwater level survey and sampling, surface water sampling, sediment sampling, and slug testing at Sites 8 and 34. Field methods for these activities are described below. The results of the field efforts are included in Sections 4 (Site 8 groundwater), 5 (Site 34 groundwater), and 6 (Sites 8 and 34 sediment and surface water).

3.1 Membrane Interface Probe Study

A MIP study was conducted at Site 34 in March and April of 2007. The objective of the study was to better determine the horizontal and vertical distribution of chlorinated volatile organic compounds (VOCs). The MIP used a DPT probing system to advance sensors through the subsurface while collecting continuous data on temperature, electrical conductivity, and VOC concentrations in gas phase. The basic operating principle behind the MIP is that a down-hole heating element raises subsurface temperatures, volatilizing most VOCs. VOCs permeate across a membrane at the probe tip and are transported to the surface in an inert carrier gas stream for analysis. The MIP rig was equipped with a flame ionization detector (FID), photoionization detector (PID), and electron capture device (ECD). The FID measures the mass of total combustible compounds in the gas stream. The PID measures only those ionizable compounds whose ionization potential is less than the PID bulb energy. The FID detects methane and other high molecular-weight organic chemicals that cannot be detected by the PID. The ECD analyzes the mass of a smaller set of organic chemicals that generally represent the chlorinated VOCs.[1] Additional sensors on the MIP measure temperature and electrical conductivity. The temperature meter assists in the estimation of the depth of the saturated zone. In general, when the water table is encountered, the temperature decreases and stabilizes. The electrical conductivity meter is used to determine the soil type (e.g., sand, clay). The PID, FID, ECD, temperature, and electrical conductivity data were collected continuously during advancement of the MIP probe at Site 34.

The MIP was advanced at 6-inch intervals beginning at 1 ft bgs and terminating at the estimated depth of the top of a confining clay unit (determined on the basis of conductivity data). In some cases, probe refusal was encountered prior to reaching the confining unit. Refusal was encountered due to back pressure on the probe's gas line, rather than the presence of a physical obstruction.

[1]Fluorinated and brominated compounds are also detected by the ECD. These compounds can cause false positive responses for chlorinated VOCs; however, these compounds are not typically encountered.

Real-time evaluation of the MIP data was completed in the field. Potential MIP sampling locations were determined using a grid system. If the ECD showed a response consistent with the detection of chlorinated VOCs, all nodes along the grid lines adjacent to that node were identified as additional MIP points. The MIP was advanced at these additional adjacent points, and the same decision making process was followed to identify any additional adjacent points needed. The process was repeated until the horizontal and vertical extent of VOC contamination was delineated. Once the MIP readings indicated that VOCs were not detected[2] at a particular point, then no additional MIP points were identified adjacent to that MIP point. Once MIP locations were completed such that VOCs were not detected at any exterior nodes adjacent to locations where VOCs had been detected or any remaining nodes were inaccessible due to terrain or utilities, it was determined that the plume had been sufficiently delineated. Results of the MIP study at Site 34 are presented in Section 5.3.1.

3.2 Direct Push Technology Groundwater Sampling

DPT groundwater samples were collected at Sites 8 and 34 to determine the placement of monitoring wells. DPT locations at Site 34 were based on previous MIP data. These groundwater samples were collected using a DPT rig with a 4-ft retractable screen. The DPT probe was advanced vertically from the ground surface to the desired sample depth at which point the screen was retracted and the sample was collected using quarter-inch polyethylene tubing and a manual check valve. Results of the DPT investigations at Sites 8 and 34 are presented in Sections 4.3.1 and 5.3.2, respectively.

3.3 Monitoring Well Installation

Monitoring wells were installed at Sites 8 and 34 as part of the RI field activities. Wells were installed according to the specifications outlined in Section 3.9.1 of Master Project Plans (Baker, 2005a). All wells were installed in the Yorktown-Eastover aquifer. If the wells were less than approximately 50 ft deep, the wells were installed using hollow-stem augers. If the wells were deeper than approximately 50 ft, the wells were installed using mud rotary drilling. If the wells were greater than approximately 50 ft deep and contamination was identified during previous investigations or during the MIP study in the shallower intervals, the wells were initiated using 8¼-inch-inner diameter (ID) hollow stem augers as outlined in Section 3.9.2 of the Master Project Plans (Baker, 2005a). Once the bottom of the contaminated interval was reached, an 8-inch diameter outer steel casing was set from the ground surface to below the area of likely contamination. Once the grout had cured, the remaining portion of the boring was drilled through the steel casing using rotary drill to the desired total depth of the well.

Soil samples, for the purposes of lithologic descriptions, were collected using 2-ft split spoons at 5-ft intervals. During soil logging, soil descriptions including grain size, color, moisture content, relative density, consistency, soil structure, mineralogy and other relevant information such as possible evidence of contamination were recorded.

[2] Current MIP ECD detection limits for chlorinated solvents range from 100 to 250 parts per billion.

Monitoring wells were constructed with 2-inch nominal diameter Schedule 40 polyvinyl chloride (PVC) screen and riser. Well screens consisted of 0.010-inch machine-slotted PVC. A silica filter pack was placed in the annular space around the well screen from the bottom of the well to a depth of approximately 2 ft above the top of the screen. A 2-ft bentonite layer was placed at the top of the sand pack. After the bentonite was hydrated, a cement-bentonite grout was placed in the remaining annular space. Monitoring wells located in grassy or wooded areas were completed with steel stick-up casings. Monitoring wells located in paved areas were finished flush to the ground surface. A locking watertight cap was placed on the PVC pipe and the well identification numbers were clearly marked on the well with water-proof paint.

Details regarding monitoring wells are included in Section 4.3.2 (Site 8) and 5.3.3 (Site 34). Boring logs and field log notes are included in **Appendix A.**

3.4 Monitoring Well Development

Newly installed monitoring wells were developed prior to sampling. Monitoring well development was performed after the grout used to construct the new monitoring wells had been allowed to adequately set (at least 24 hours or more) to prevent grout contamination of the screened interval. Wells were developed using a submersible Whale® pump, Waterra® pump or stainless steel bailer. Between 30 and 80 gallons of water were evacuated from each well. Development continued until either five successive measurements of pH, specific conductivity, and temperature were stable (i.e., the readings for each measurement were within 10 percent of each other), until water was visibly clear, or until the well was pumped dry. Development information is included in well construction diagrams in **Appendix A.**

3.5 Groundwater Sampling

Groundwater samples were collected from new and existing monitoring wells using low flow sampling methodology. Samples were collected from wells with total depths of less than 30 ft using a peristaltic pump and disposable tubing. Samples were collected from wells with depths of greater than 30 ft using a Grundfos® or Monsoon® submersible pump. Groundwater quality parameters comprising pH, conductivity, turbidity, dissolved oxygen (DO), temperature, salinity, and oxidation-reduction potential (ORP) were collected during purging of each well using a Horiba U-22 water quality meter and a flow-through cell. Purging was continued until water quality readings collected 5 minutes apart were stabilized to within 10 percent of one another or until three well volumes were purged. Once the parameters had stabilized, the flow-through cell was disconnected and samples were collected into laboratory-prepared, pre-preserved sample bottles and packed on ice for overnight shipment to Microbial Insights (microbial samples) or Test America (all other analytical samples). Dissolved metals samples were field-filtered prior to collection into the sample containers. Site 8 monitoring wells were sampled for target compound list (TCL) VOCs, TCL semivolatile organic compounds (SVOCs), TCL polychlorinated biphenyls (PCBs), explosives, and Target Analyte List (TAL) inorganics (total and dissolved). Site 34 groundwater was analyzed for TCL VOCs, explosives, and TAL inorganics (total and dissolved). Sample parameters were selected consistent with chemicals potentially posing risk during previous investigations as outlined in the Work Plan.

3.6 Water Level Survey

A water level survey was conducted for each of the sites using an electronic water level indicator. The meter was lowered into each of the wells and the depth to water was recorded with an accuracy of 0.01 ft. Water level information is provided in Sections 4.3.4 and 5.3.5.

3.7 Sediment and Surface Water Sampling

Sediment and surface water samples were collected within the channel of the Eastern Branch of Felgates Creek to assist in evaluating potential impacts to and potential exposure pathways from sediment and surface water from Sites 8 and 34 groundwater. Samples were collected from four locations associated with Site 8, six locations associated with Site 34, and six upgradient reference locations as discussed in Section 6. Surface water and sediment samples were collected starting with downstream locations and working upstream. At each co-located surface water and sediment sampling station, surface water samples were collected prior to the collection of sediment samples.

Prior to surface water sample collection, water quality data was measured using a Horiba U-22® water quality meter and the time of high and low tides in the York River tidal cycle for the date of sampling was also recorded. Sediment samples were collected from the top 4 inches of sediment using a stainless steel trowel and were transferred into laboratory prepared sample containers. Surface water and sediment samples were analyzed for TCL VOCs, TCL SVOCs, TCL pesticides/PCBs, explosives, and TAL inorganics (total and dissolved). Sediment samples were also analyzed for pH, total organic carbon (TOC), acid volatile sulfide/simultaneously extractable metals (AVS/SEM), and grain size. Surface water samples were also analyzed for alkalinity. The results of the sediment and surface water sampling are discussed in Section 6.

3.8 Seeps Sampling

Although seep samples were originally proposed during the work planning for this investigation, no seeps were identified at these sites during the site visit by the Biological and Technical Assistance Group (BTAG) on March 25, 2008. As such, no seep samples were collected from either Site 8 or Site 34.

3.9 Slug Testing

Slug tests were conducted at selected monitoring wells at Sites 8 and 34. These wells were selected for spatial distribution and at varying depths in the Yorktown-Eastover aquifer to provide data throughout the extent of the aquifer at each site and generate an overall estimate of the horizontal hydraulic conductivity of the aquifer. Wells tested at each site and results are included in Sections 4.3.5 (Site 8) and 5.3.6 (Site 34).

Due to the limited area of influence, the slug test data provide a rough estimate of the hydrogeologic parameters of the unit proximal to the individual monitoring wells. The tests were conducted by rapidly introducing a solid displacement device (slug) into the well for the falling head test and rapid removal of the slug from the well for the rising head test. The

slug consisted of a 5-ft length of solid PVC, and the water level data was recorded using a Mini TROLL® pressure transducer.

Falling head and rising head tests were considered for all monitoring wells included in the slug tests. However, where the static water level was below the top of the well screen, the falling head was not completed since it could result in overestimating hydraulic conductivity. For those wells, only the rising head test was completed. Data were recorded for each test until the water level had recovered to 90 percent of the pre-test level. The slug tests were analyzed using the Bouwer and Rice Method included in *A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrative Wells. Water Resources Research 12:423-28* (Bouwer and Rice, 1976). Results of slug tests are discussed in Sections 4.3.5 and 5.3.6.

3.10 Quality Assurance/Quality Control

Samples collected for this field investigation were analyzed using Contract Laboratory Program (CLP) methods with Level IV Quality Assurance/Quality Control (QA/QC).

Field QA/QC samples were collected during the sampling program. These samples were obtained to:

- Ensure that disposable and reusable sampling equipment were free of contaminants
- Evaluate field methodology
- Establish ambient field background conditions
- Evaluate whether cross-contamination occurred during sampling and/or shipping

Several types of field QA/QC samples were collected and analyzed and are defined below:

- **Equipment Rinsate Blank—**These samples were obtained by running laboratory grade deionized (DI) water over/through sample collection equipment after the piece of equipment was decontaminated (for reusable equipment) or prior to the equipment's use (for disposable equipment). These samples were used to determine if decontamination procedures for reusable equipment were adequate and/or if disposable, one-time use equipment was contaminant-free prior to use.

- **Duplicate Sample—**Duplicate samples were collected at the same time and under identical conditions as their associated sample. These samples were collected to evaluate reproducibility of sample results. One duplicate sample was collected for every 10 environmental samples collected (or 10 percent).

- **Field Blank—**Field blanks were collected to evaluate potential impacts to samples due to ambient air conditions in the field. Samples were collected using laboratory grade DI water, which was poured into sample bottles in the field under the same conditions under which environmental samples were collected.

- **Trip Blank—**Trip blanks were prepared at the laboratory, shipped with the sample containers, and stored onsite near the empty sample containers. Any time VOC samples were packed and shipped to the laboratory, a trip blank sample was included inside the shipping cooler. The trip blanks were analyzed for VOCs, along with the other VOC

samples. Trip blanks were used to evaluate whether or not cross-contamination may have occurred during sampling and/or shipping.

In addition to samples collected to monitor field QC, samples were also collected to monitor quality within the laboratory. These included the following:

- **Matrix Spike (MS)—**An aliquot of a matrix (either soil/sediment or water) was spiked with known quantities of specific compounds and subjected to the entire analytical procedure. By measuring recovery, the appropriateness of the method for the matrix was determined.
- **Matrix Spike Duplicate (MSD)—**These samples were collected as second aliquots of the same matrix as the matrix spike to determine the precision of the method.

One MS sample and one MSD sample were collected for every 20 environmental samples collected (or 5 percent of the samples collected).

3.11 Decontamination Procedures

Decontamination procedures for heavy equipment (e.g., drilling augers), sampling equipment, and personnel were followed as per Section 3.23 of the Master Field Sampling Plan (Baker, 2005a). An industrial grade steam cleaner was used to decontaminate heavy equipment. Liquinox®, distilled water, a 10 percent methanol rinse, and DI water were used to decontaminate the submersible pump motor lead between well sampling of individual wells and the stainless steel trowels between sediment sampling locations. All other equipment used for sample collection was disposable.

3.12 Surveying Activities

Spectra Group (a Virginia-licensed and registered surveyor) conducted surveys of the new monitoring wells in January, February, and September of 2008. Each of the monitoring wells was surveyed for vertical and horizontal control to an accuracy of 0.01 ft and 0.1 ft, respectively. Monitoring wells were surveyed at the top of the PVC casing and at the ground surface. The vertical elevations were referenced to National Geodetic Vertical Datum 88 to remain consistent with the existing WPNSTA Yorktown vertical datum. Horizontal coordinates conformed to North American Datum 83 (Latest Adjustment) with ties to the Virginia State Plane Coordinate System. The survey reports for these sites are included as **Appendix B**.

3.13 Investigation-derived Waste Management

Solid investigation-derived waste (IDW) generated during the field investigation (soil cutting and drilling mud) was contained in portable roll-off containers or drums. Liquid IDW was contained in a portable Baker tank or drums. Soil samples and one liquid composite sample were collected from each roll-off/tank/drum for Full Toxicity Characteristic Leachate Procedure (TCLP) (VOC, SVOC, pesticides, and inorganics) and ignitability, corrosivity, and reactivity analysis. After receipt of analyses, the IDW was determined to be non-hazardous and was removed from the site by Potomac Environmental

Services and Capitol Environmental Services. The IDW disposal documentation is contained in **Appendix C**.

Health and safety expendables, such as sampling gloves, paper towels, polyethylene sheeting and other materials that came into contact with potential contamination were contained in large plastic bags and placed in municipal waste containers for disposal.

3.14 Data Validation

Data validation was performed by Data Qual Environmental Services of St. Louis, Missouri (**Appendix D**). The data qualifiers used were those presented in USEPA *Region 3 Modifications to National Functional Guidelines for Organic Data Review, MultiMedia, Multi Concentration* (USEPA, 1994b) and USEPA *Region 3 Modification to National Functional Guidelines for Evaluating Inorganic Analyses* (USEPA, 1993b).

The data validation qualifiers, or flags, used for this RI comprise:

- A "B" flag by the data validator indicates that the analytes have also been detected in a field, equipment, or trip blank, or in a laboratory QA/QC sample. The concentration of a "B"-qualified result is less than 5 or 10 times the concentration of the constituent for an associated QA/QC result. If the sample concentration is less than 5 or 10 times the associated blank concentration, the conclusion is that the analyte is not present in the sample.
- A "J" flag indicates that the analyte is present but the value is estimated.
- An "L" flag indicates that the analyte is present, but the reported value may be biased low and the actual value is expected to be higher.
- An "H" flag indicates that a holding time was exceeded. For this sample set this occurred for a nitrate sample which exceeded the holding time by a few hours. Because this is a geochemical parameter that is not used for risk assessment, an additional sample was not collected.
- A "U" flag indicates that the analyte was not detected and the associated value indicates the approximate sample concentration necessary to be quantified.
- A "UJ" flag indicates that the analyte was not detected and the quantitation limit may be inaccurate or imprecise.
- A "UL" flag indicates that the analyte was not detected and the quantitation limit is probably higher.
- A "K" flag indicates that the analyte is present, but the reported value may be biased high and the actual value is expected to be lower.

SECTION 4

Site 8 Remedial Investigation Results for Groundwater

This section includes background information, investigation results, and nature and extent of groundwater contamination at Site 8.

4.1 Location, Setting, History, and Hydrogeology

Site 8, the NEDED Explosives Contaminated Wastewater Discharge Area, is located in the east-central part of WPNSTA Yorktown (**Figures 2-1 and 4-1**). The site is located along the Eastern Branch of Felgates Creek, just downstream of Site 34 and about 1.5 miles from the confluence of the creek and the York River. The site is located off of Manley Road near Building 456 and consists of a 300-ft drainage way and its surrounding area.

The Site 8 discharge area received wastewater from the NEDED complex (Building 456) from 1940 until 1986. Prior to 1975, the wastewater reportedly contained solvents (including trichloroethene [TCE]), spent/neutralized acids, and explosives. After 1975, a carbon adsorption tower was used to treat the contaminated wastewater prior to discharge into the drainage area. A National Pollutant Discharge Elimination System (NPDES) permit was granted by USEPA to allow this discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to Hampton Roads Sanitary District (HRSD). Contaminated soil and drainage channel sediments at the site were excavated in accordance with the *Final Engineering Evaluation/Cost Analysis for Contaminated Soil and Sediment, Site 8 and SSA 14, Naval Weapons Station Yorktown, Yorktown, Virginia* (Baker, 2005c).

The eastern part of the site consists of a paved parking lot. The western part of the site around the drainage channel is wooded. Most of the site is relatively flat with the exception of the drainage channel itself, which is situated in a ravine with steeply sloping sides. It is anticipated that surface water run-off at the site would flow into the drainage channel and the Eastern Branch of Felgates Creek.

The surficial geology at Site 8 consists of between 0 and 20 ft of silt and clay consistent with the Yorktown confining unit. This silt and clay unit (where present) overlies a medium to coarse gray sandy unit with shell hash that represents the semi-confined Yorktown-Eastover aquifer. In the western portion of the site near the creek, the clay is absent, and sand is present at the surface. The Yorktown-Eastover aquifer is approximately 80 ft thick near Site 8.

Depth to groundwater at the site is approximately 6 ft bgs. Groundwater generally flows westward toward Felgates Creek and the drainage channel.

4.2 Previous Investigations

Several investigations and a removal action have been completed at the site. Results of this work are included in the following documents and summarized below:

Title	Author and Date	Administrative Record #
Initial Assessment Study of Naval Weapons Station Yorktown, Virginia	NEESA, 1984	00247
Confirmation Study Step 1A (Verification), Round One, Naval Weapons Station Yorktown, Yorktown, Virginia	Dames & Moore, 1986	00256
Confirmation Study Step 1A (Verification), Round Two, 4-Naval Weapons Station Yorktown, Yorktown, Virginia.	Dames & Moore, 1988	00259
Remedial Investigation Interim Report, Naval Weapons Station, Yorktown, Virginia	Versar, 1991	00812
Final Round One Remedial Investigation Report for Sites 1-9, 11, 12, 16-19, and 21, Naval Weapons Station Yorktown, Yorktown, Virginia	Baker and Weston, 1993	00313
Final Round Two Remedial Investigation Report for Sites 2, 8, 18, and Site Screening Area 14. Naval Weapons Station Yorktown, Yorktown, Virginia	Baker, 2004	01548
Work Plan for the Pre-Removal Characterization of Soils, Sites 2, 18, SSA 14, Naval Weapons Station Yorktown, Yorktown, Virginia, and Cheatham Annex, Williamsburg, Virginia	Baker, 2005b	01687
Engineering Evaluation/Cost Analysis (EE/CA) for Contaminated Soil and Sediment, Site 8 and SSA 14	Baker, 2005c	02076
Action Memorandum for Contaminated Soil and Sediment, Site 8 and SSA 14	Baker, 2005d	01871
Work Plan Interim Removal Action, Site 8 and SSA 14, Naval Weapons Station Yorktown, Yorktown, Virginia.	Shaw, 2006	01890
Explosives Safety Submission (ESS) Determination for Soil and Sediment Removal Operations, Site 8 and SSA 14	NOSSA, 2006	02033
RI Work Plan for Groundwater, Sites 4, 8, 21, 22, and SSA 14	CH2M HILL, 2007	02153
Removal Action and Post-Removal Confirmation Sampling Summary Technical Memorandum, Site 8, Naval Weapons Station Yorktown, Yorktown, Virginia.	CH2M HILL, 2008	02209
Final Construction Completion Report, Site 8 and SSA 14	Shaw, 2009	No admin record number yet

During the investigations listed above, potential human health risks were identified in the drainage area soils at Site 8 from exposure to polycyclic aromatic hydrocarbons (PAHs), PCBs, explosives, and inorganics. Potential human health risks were also identified for exposure to VOCs, explosives, and inorganics in groundwater. Potential ecological risks

were identified in drainage area soils from exposure to PCBs, explosives, and inorganics, and in surface water from exposure to explosives and inorganics (Baker, 2004).

In 2005, soil and sediment sampling was conducted within the drainage area to support removal action. Sampling results were used to complete an EE/CA (Baker, 2005c) and Action Memorandum (Baker, 2005d) for a Non-time-critical Removal Action (NTCRA). The EE/CA recommended excavation with off-site disposal of contaminated soils and sediments within the drainage channel to mitigate potential unacceptable human health and ecological risks. Cleanup goals were developed as part of this EE/CA for protection of human health and ecological receptors.

The drainage area removal action was completed in 2007 (Shaw, 2008). Subsequent to this action, the Navy, USEPA, and VDEQ agreed that all potential unacceptable human health and ecological risk from exposure to drainage channel soils and sediments had been mitigated (CH2M HILL, 2008).

While the source area has been removed, potential impacts to groundwater and potential transport in groundwater to nearby surface water bodies were not addressed. The purpose of this RI was to investigate these dynamic media.

4.3 Field Activities and Investigation Results

4.3.1 Direct Push Technology Groundwater Sampling Results

Eight DPT groundwater samples were collected in May and June 2007 to characterize the extent of chlorinated VOC and explosive contamination in the vicinity of the on-site drainage channel. Detections are shown on **Figure 4-2**. Raw analytical results are included in **Appendix D**. Three of the four proposed DPT samples were collected along the drainage channel, locations 1, 2 and 3. These samples were collected to evaluate possible groundwater contamination downgradient of the discharge pipe outfall. One location (Location 4 designated in the Work Plan) could not be accessed due to the presence of buried utilities. Two DPT samples were collected in the vicinity of Building 456, Locations 5 and 6, Location 5 had to be moved closer to the discharge pipe near the original location designated as Location 4 due to subsurface utilities.

There were no chemicals present in the sample from Location 6 that exceeded maximum contaminant levels (MCLs) or regional screening levels (RSLs). The only chemical detected in the sample from Location 1 that exceeded the RSL was chloromethane (3J micrograms per liter [µg/L]), slightly above the RSL of 1.8 µg/L. The concentrations of vinyl chloride (120 µg/L), cis-1,2-dichloroethene (cis-1,2-DCE) (350D µg/L), and TCE (10 µg/L) exceeded corresponding MCLs and RSLs in the sample from Location 2. The concentration of hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) (26 µg/L) also exceeded the RSL in the sample from Location 2. The only contaminants detected at a concentrations exceeding corresponding screening values in the sample from DPT Location 3 were chloromethane (2 J µg/L) and nitroglycerin (3.7 JPM µg/L). Contaminant concentrations in the sample from DPT Location 5 exceeded the MCL and RSL for tetrachloroethene (PCE) (6 J µg/L) and exceeded RSLs for chloroform (1 J µg/L), chloromethane (2 J µg/L), RDX (170 D µg/L), nitroglycerine (14 µg/L), 2,4,6-TNT (80 D µg/L), 2-amino-4,6-dinitritoluene (2-amino-4,6-DNT) (74 µg/L), and 4-amino-2,6-DNT (80 µg/L).

Following a review of this data, additional DPT samples were collected moving away from the highest detections of VOCs at Location 2. Samples were collected at locations 2B and 2C (**Figure 4-2**). Additionally, in order to provide more resolution for contaminant concentrations in the vicinity of Location 5, Location 7 was added to the south of Location 5. Results of these samples indicated contaminant concentrations in the sample from Location 2B exceeded MCLs and/or RSLs for vinyl chloride (50 µg/L), cis-1,2-DCE (200 J µg/L), and RDX (1.2 µg/L). There were no exceedances of screening values associated with Sample 2C. Concentrations of chloromethane (5 J µg/L) and RDX (58 µg/L) in the sample from Location 7 exceeded corresponding RSLs for these chemicals (1.8 µg/L and 0.61 µg/L, respectively).

Based on the DPT results, monitoring wells were installed in the vicinity of DPT Locations 2 and 2B (shallow/deep well pair: GW09/GW09A) and Location 5 (shallow well GW08). The original sampling strategy included in the work plan required installation of a deep monitoring well in Location 5 if there were VOC exceedances of an MCL in this location. Because the only VOC exceedance was PCE at a concentration of 6 J µg/L (just above the MCL of 5 µg/L), the WPNSTA Yorktown partnering team agreed at the August 2007 meeting to install the shallow well only. Shallow monitoring wells 8GW06 and 8GW07 were also installed to fill spatial data gaps as per the work plan. Details regarding new monitoring wells are included in Section 4.3.2.

4.3.2 Monitoring Well Installation

Five new monitoring wells were installed in support of the groundwater RI at Site 8.

- **YS08-GW06—**Shallow monitoring well screened in the top 20 ft of the Yorktown-Eastover aquifer to act as an upgradient of monitoring well because contamination was detected in samples from YS08-GW03 during previous investigations.
- **YS08-GW07—**Shallow monitoring well screened in the top 20 ft of the Yorktown-Eastover aquifer to investigate possible VOC and explosive contamination cross-gradient of monitoring well YS08-GW01 (screened at 4–19 ft bgs) and to determine the northern extent of contamination
- **YS08-GW08—**Shallow monitoring well screened in the top 20 ft of the Yorktown-Eastover aquifer to investigate VOC and explosive contamination previously identified at DPT Location 5
- **YS08-GW09/09A—**Shallow and deep monitoring well pair (screened in the top and bottom 20 ft of the Yorktown-Eastover aquifer to investigate VOC and explosive contamination previously identified at DPT locations 2 and 2B, downgradient of the outfall discharge.

General well installation procedures are described in Section 3.3. Monitoring well construction details for new and existing wells are tabulated on **Table 4-1**, and locations are shown on **Figure 4-1**. A hydrogeologic cross section is included on **Figures 4-3 and 4-4.** Boring logs and construction diagrams are included in **Appendix A**.

4.3.3 Groundwater Sampling and Results of Field Water Quality Measurement

Groundwater samples were collected from all new and existing monitoring wells in accordance with procedures described in Section 3.5 with the exception of YS08-MW02

which could not be found. Several attempts were made to locate this flush-mount well with a metal detector and GPS; however, these attempts failed. Based on DPT data and the current monitoring well network it was determined that replacing YS08-MW02 was not necessary. Field parameters were collected during groundwater purging and are presented as **Table 4-2**.

On the basis of the field results, conditions at the site appeared to be slightly oxidizing to slightly reducing. DO concentrations ranged from 0 milligrams per liter (mg/L) to 3.61 mg/L based on quantitative measurements from the Horiba water quality meter. However, these seem inconsistent with the colormetric Chemets™ test kits results which were generally between 1 and 2 mg/L. ORP values were generally consistent with Chemets™ values, ranging from -120 millivolts (mV) to 211 mV. On the basis of ORP results, deeper wells appear to be more reducing. Groundwater pH ranged from 6.77 to 9.79. Conditions in the deeper of the wells installed as well pairs (YS08-GW01A and YS08-GW09A) were more alkaline than the conditions in the shallow wells. Salinity results ranged from 0.02 percent to 0.05 percent, indicating fresh water across the site. Specific conductance values ranged from 0.42 milliSiemens per centimeter (mS/cm) to 1.02 mS/cm across the site, indicating a slight ionic potential in site groundwater. Following purging, wells were sampling using low flow sampling methodology. All Site 8 groundwater samples were submitted for analysis of TCL VOCs, TCL SVOCs, explosives, TAL total and dissolved metals, and TCL PCBs. Additionally, YS08-GW01, YS08-GW06, YS08-GW07, YS08-GW08, YS08-GW09, and YS08-GW09A were sampled for alkalinity, chloride, nitrate, nitrite, sulfate, sulfide, TOC, methane, ethane, and ethene. Samples from YS08-GW01 and YS08-GW06 were also sampled for *Dehalococcoides sp.*

4.3.4 Water Level Survey

Groundwater elevations were measured from monitoring wells on January 14, 2008 in accordance with Section 3.6. Results are included in **Table 4-3** and the Yorktown-Eastover aquifer shallow potentiometric contour map is presented on **Figure 4-5.** The results indicate the groundwater within the Yorktown-Eastover flows westward toward the Eastern Branch of Felgates Creek.

4.3.5 Slug Testing

Aquifer testing was completed at three monitoring wells (8GW01, 8GW01A, and 8GW03). Results are included in **Table 4-4**. Rising and falling head tests were completed for well 8GW01A. Only the rising head test was conducted at wells 8GW01 and 8GW03 since the static water level was located below the top of the well screen and the falling head test could result in water draining from the well into the gravel pack and vadose zone providing an overestimation of the hydraulic conductivity. Results indicate that the average horizontal hydraulic conductivity within the Yorktown-Eastover aquifer was 4.08 feet per day (ft/day).

4.4 Groundwater Analytical Results and Nature and Extent of Groundwater Contamination

Previous investigations indicate that chemicals of potential concern (COPCs) at the site include VOCs, SVOCs, PCBs, explosives, and inorganics. This study included sampling all 10 monitoring wells for these analytes to determine the nature and extent of contamination.

Analytical detections are included in **Table 4-5**. Raw results are included in **Appendix D**. Analytical results are summarized by contaminant type below.

4.4.1 VOCs

Seven VOCs were detected in Site 8 groundwater: 2-butanone, carbon disulfide, chloroform, PCE, toluene, TCE, and vinyl chloride. Four were detected at concentrations greater than RSLs or MCLs, in samples from four separate wells. TCE was detected in the sample from YS08-GW01 at a concentration of 2 J µg/L, greater than the RSL (1.7 µg/L), but less than the MCL (5 µg/L). Vinyl chloride was detected in the sample from YS08-GW01A at a concentration of 1.2 J µg/L, greater than the RSL of 0.016 µg/L. Chloroform was detected in the sample from YS08-GW07 at a concentration of 3.7 J µg/L, greater than the RSL of 0.19 µg/L. PCE was detected in the sample from YS08-GW08 at a concentration of 7.4 J µg/L, greater than the corresponding RSL of 0.11 µg/L, and the MCL of 5 µg/L. All wells in which VOCs were detected are located west of Building 456 as shown on **Figure 4-6**.

4.4.2 Pesticides and PCBs

There were no PCBs or pesticides detected in Site 8 groundwater during this investigation.

4.4.3 SVOCs

One SVOC, bis(2-ethylhexyl)phthalate, was detected in one sample (YS08-GW01) at a concentration of 96 µg/L, greater than the RSL (4.6 µg/L), and the MCL (6 µg/L). This well is located in the vicinity of the drainage ditch (**Figure 4-6**).

4.4.4 Explosives

A number of explosives were detected in Site 8 groundwater during the Groundwater RI. All detections of explosives were from samples in the shallow portion of the Yorktown-Eastover aquifer. The most frequently detected explosive was RDX which was detected in five of the eight shallow monitoring wells (**Figure 4-7**). The highest concentration of RDX was detected in the sample from YS08-GW08 (300 µg/L) between Building 456 and the drainage ditch. Five of the six detected concentrations exceeded the RSL (0.61 µg/L). 2,4,6-TNT, 4-amino-2,6-DNT, and 2-amino-4,6-DNT were also detected in the sample from YS08-GW08 at concentrations of 55 µg/L, 73 µg/L, and 82 µg/L respectively, greater than the corresponding RSLs of 2.2 µg/L, 4.3 µg/L, and 7.3 µg/L, respectively. A number of other explosives were detected, but concentrations did not exceed screening values in any samples. On the basis of these data, it appears that the area most contaminated by explosives consists of the shallow portion of the aquifer between Building 456 and the drainage outfall.

4.4.5 Total Inorganics

Of the 24 TAL inorganics analyzed, 18 were detected. Cadmium, cyanide, mercury, selenium, silver, and thallium were not detected in any of the samples. Arsenic was the only chemical detected in any samples at a concentration exceeding screening values (**Figure 4-8**), Arsenic was detected at concentrations exceeding one or more screening values in 5 of the 10 wells, including YS08-GW06, the upgradient reference well. The maximum concentration was detected in the sample from YS08-GW07 (11.5 µg/L), located north of the drainage. This concentration exceeded both the RSL (0.045 µg/L) and the MCL (10 µg/L) for this chemical.

4.4.6 Dissolved Inorganics

Of the 23 inorganics analyzed, 15 were detected. Beryllium, cadmium, cobalt, mercury, selenium, silver, thallium, and zinc were not detected in any of the dissolved samples. The only chemical detected at a concentration exceeding a corresponding MCL or RSL was arsenic (**Figure 4-8**). Arsenic was detected in only one sample, the upgradient reference sample (YS08-GW06), at a concentration of 5.8 J µg/L, and is therefore unlikely to be site-related.

4.4.7 Geochemical Results

Geochemical samples were collected from six wells at Site 8 (YS08-GW01, YS08-GW06, YS08-GW07, YS08-GW08, YS08-GW09, and YS08-GW09A). Geochemical parameters are useful in determining the potential for implementation of various groundwater remedies including in situ chemical and biological treatments and monitored natural attenuation. Geochemical results for Site 8 are included in **Table 4-5**.

- **Alkalinity** is a measure of the buffering capacity of an aquifer. Alkalinity results ranged from 150 mg/L to 310 mg/L. These results indicate relatively high buffering capacity, and limited potential for changing the aquifer pH.
- **TOC** is generally a good indicator of the presence of organic material in the aquifer. TOC results indicate the presence of organic carbon in groundwater from five out of six wells sampled at concentrations between 1 mg/L and 2 mg/L.
- **Chloride** is useful in determining degradation rates of some substances over time, particularly chlorinated solvents. Chloride concentrations were between 6 mg/L and 30 mg/L, respectively. These results serve as baseline data as this is the first round of chloride data collected from Site 8 groundwater.
- **Nitrate and nitrite** are used to determine the oxidizing/reducing potential of the aquifer. Nitrate was detected in samples from YS08-GW07 and YS08-GW08 at concentrations of 0.5 mg/L and 0.9 mg/L, respectively. Nitrite was only detected in the sample from YS08-GW08, at a concentration of 0.08 mg/L. At Site 8, nitrogen was found predominantly in its oxidized state (nitrate). Consequently, it can be concluded that the aquifer is capable of the oxidation of nitrite, indicating more oxidizing conditions. However, the overall nitrate/nitrite content of this aquifer is low.
- **Sulfate and sulfide** are also used to determine the oxidizing/reducing potential of the aquifer. Sulfate was detected in all samples at concentrations between 17 mg/L and 49 mg/L, respectively. Sulfide was detected in only one sample (YS08-GW01) at a concentration of 38 mg/L. At Site 8, sulfur compounds were primarily in their oxidized state (sulfate); however, some sulfide was detected, indicating that conditions are reducing enough to facilitate some reduction of sulfate to sulfide in some areas.
- **Methane** was detected in all wells sampled at concentrations between 2.2×10^{-4} mg/L and 0.19 mg/L. This indicates that conditions are reducing enough in portions of the aquifer for a small amount of methanogenesis.
- **Ethane and ethene** are degradation products of chlorinated ethanes and ethenes. Ethane was detected in three samples at concentrations ranging from 3.5×10^{-4} mg/L to

8.3×10^{-4} mg/L. Ethene was detected in YS08-GW09 only, at a concentration of 4.9×10^{-4} mg/L. Because there were no substantial quantities of chlorinated solvents detected at this site, the low levels of ethene and ethane are expected.

Based on geochemical conditions at this site, biological treatments that require either oxidizing or reducing conditions could be implemented relatively easily, if required. Remedies requiring attainment of a specific pH (such as certain chemical oxidation treatments) may be complicated by the high buffering capacity of the aquifer.

4.4.8 Microbial Results

Samples were collected from YS04-GW01 and YS04-GW06 for analysis of *Dehalococcoides species* to determine the potential for degradation of chlorinated ethenes at the site. Laboratory analytical reports for the microbial testing are included in **Appendix E**. Results are summarized in **Table 4-5**. Concentrations of *Dehalococcoides* in these wells were 10.9 cells per milliliter (cells/mL) and 1.26 cells/mL, respectively, and indicate the presence of low concentrations of dechlorinating microorganisms across the site.

Table 4-1
Site 8 Well Construction Details
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Monitoring Well ID	Date Installed	Top of Casing Elevation (ft above msl)	Ground Surface Elevation (ft above msl)	Boring Depth (ft bgs)	Well Depth (ft bgs)	Outer Steel Casing (ft bgs)	PVC Riser (ft bgs)	Screen Interval Depth (ft bgs)	Depth to Bentonite (ft bgs)
YS08-GW01	1/18/97	18.3	15.7	19	19	NA	4	4.0-19.0	1
YS08-GW01A	1/18/97	17.94	15.4	100	100	NA	85	85.0-100.0	81
YS08-GW02	1/18/97	15.72	16.4	23	23	NA	8	8.0-23.0	4
YS08-GW03	1/18/97	16.33	16.7	19	19	NA	4	4.0-19.0	1
YS08-GW04	5/12/00	38.89	36.3	44.5	44.5	NA	34	34.0-44.0	30
YS08-GW05	5/16/00	17.09	14.7	20.5	20.5	NA	10	10.0-20.0	6
YS08-GW06	10/14/07	17.54	17.9	31	31.00	NA	11	11.0-31.0	7
YS08-GW07	8/8/08	35.88	32.8	44.00	44.00	NA	24	24.0-44.0	20
YS08-GW08	8/9/09	18.07	15.3	33.00	33.00	NA	13	13.0-33.0	9
YS08-GW09	8/6/08	16.15	13.4	31	31.00	NA	11	11.0-31.0	7
YS08-GW09A	8/7/08	16.41	13.5	71	71.00	NA	51	51.0-71.0	47

Table 4-2
Site 8 Field Parameter Results
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	YS08-GW01	YS08-GW01A	YS08-GW03	YS08-GW04	YS08-GW05	YS08-GW06	YS08-GW07	YS08-GW08	YS08-GW09	YS08-GW09A
Sample ID	YS08-GW01-1107	YS08-GW01A-1107	YS08-GW03-1107	YS08-GW04-1107	YS08-GW05-1107	YS08-GW06-1107	YS08-GW07-0808	YS08-GW01-0808	YS08-GW09-0808	YS08-GW09A-0808
Sample Date	11/13/07	11/12/07	11/13/07	11/14/07	11/14/07	11/14/07	8/11/08	8/13/08	8/11/08	8/11/08
Field Parameter										
Dissolved Oxygen (mg/L)	0.5	3.61	1.43	2.1	0.84	0.38	0.6	0	0	0
Dissolved Oxygen by Chemets (mg/L)	1	1	NA	1	2	1	NA	NA	NA	NA
Oxidation Reduction Potential (mV)	139	-20	182	211	185	-39	66	81	2	-120
pH	6.91	9.79	6.89	7.36	6.77	7	8.2	7.02	6.92	7.53
Salinity (pct)	0.03	0.03	0.03	0.02	0.05	0.04	0.02	0.02	0.02	0.02
Specific Conductivity (mS/cm)	0.728	0.622	0.749	0.559	1.02	0.832	0.42	0.507	0.565	0.52
Temperature (°C)	21.6	18.7	21.8	19.7	18.7	19.9	17.3	20.7	20.4	19.05
Turbidity (NTU)	0	10.2	0	13.2	128	132	315	33.0	178	197

Notes:

C - Degrees centigrade
ft - Feet
gal - Gallons
gal/min - Gallons per minute
mg/L - Milligrams per liter
mS/cm - Milliseimens per centimeter
mV - Millivolts
NTU - Nephelometric turbidity unit
pct - Percent
NA - Not analyzed

Table 4-3
Site 8 Water Level Survey Results
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Monitoring Well ID	Date of Survey	Depth to Bottom (feet)	Depth to Water (feet)	Top of Casing Elevation (feet)	Water Level Elevation (feet)
YS08-GW01	8/25/08	21.30	12.60	18.3	5.70
YS08-GW01A	8/25/08	101.00	12.25	17.94	5.69
YS08-GW03	8/25/08	18.30	9.82	16.33	6.51
YS08-GW04	8/25/08	46.30	32.00	38.89	6.89
YS08-GW05	8/25/08	19.45	11.05	17.09	6.04
YS08-GW06	8/25/08	30.30	11.35	17.54	6.19
YS08-GW07	8/25/08	47.00	31.84	35.88	4.04
YS08-GW08	8/25/08	35.90	13.52	18.07	4.55
YS08-GW09	8/25/08	34.00	13.23	16.15	2.92
YS08-GW09A	8/25/08	71.00	14.15	16.41	2.26

Table 4-4
Site 8 SlugTest Results
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Site	Well ID	Test Type/ID	Hydraulic Conductivity (ft/day)	Well Average Hydraulic Conductivity (ft/day)	Site Average Hydraulic Conductivity Per Hydrologic Unit(ft/day)	Comments
Site 8	8GW01A	Falling Head #2	8.01E-04		ECCU	Boring log indicates screened in YE, likely
		Rising Head #1	3.22E-04	5.62E-04	5.62E-04	screened in ECCU based on K value
	8GW01	Rising Head #1	2.88E+00			Boring log indicates screened in YCU,
		Rising Head #4	2.82E+00	2.85E+00		likely screened in YE based on K
	8GW03	Rising Head #1	5.12E+00			
		Rising Head #2	5.32E+00		YE	Boring log indicates screened in YCU,
		Rising Head #3	5.50E+00	5.31E+00	4.08E+00	likely screened in YE based on K

Notes
ECCU - Eastover-Calvert Confining Unit
YCU - Yorktown Confining Unit
YE - Yorktown-Eastover Aquifer

Table 4-5
Analytical Detections and Exceedances for Site 8 Groundwater
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	MCL - GW	RSLs Tap for GW	YS08-GW01	YS08-GW01A	YS08-GW03	YS08-GW04	YS08-GW05	YS08-GW06		YS08-GW07	YS08-GW08	YS08-GW09		YS08-GW09A
Sample ID			YS08-GW01-1107	YS08-GW01A-1107	YS08-GW03-1107	YS08-GW04-1107	YS08-GW05-1107	YS08-GW06-1107	YS08-GW06P-1107	YS08-GW07-0808	YS08-GW08-0808	YS08-GW09-0808	YS08-GW09P-0808	YS08-GW09A-0808
Sample Date			11/13/07	11/12/07	11/13/07	11/14/07	11/14/07	11/14/07	11/14/07	08/11/08	08/13/08	08/11/08	08/11/08	08/11/08
Chemical Name														
Volatile Organic Compounds (UG/L)														
2-Butanone	--	7,100	10 U	3.2 J	10 U	5.4 B	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	--	1,000	10 U	10 U	10 U	10 U	10 U	0.44 J	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	80	0.19	1.1 B	10 U	1.2 B	2.4 B	0.94 B	10 U	10 U	3.7 J	10 U	10 U	10 U	10 U
Tetrachloroethene	5	0.11	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	7.4 J	10 U	10 U	10 U
Toluene	1,000	2,300	10 U	0.73 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	1.7	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	0.016	10 U	1.2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Semivolatile Organic Compounds (UG/L)														
bis(2-Ethylhexyl)phthalate	6	4.8	96	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Pesticide/Polychlorinated Biphenyls (UG/L)														
No Detections														
Explosives (UG/L)														
1,3,5-Trinitrobenzene	--	1,100	0.1 U	0.1 U	0.096 U	0.1 U	0.098 U	0.1 U	0.1 U	0.097 U	14	0.32	0.31	0.1 U
2,4,6-Trinitrotoluene	--	2.2	0.3	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	55	0.95	0.87	0.16 U
2-Amino-4,6-dinitrotoluene	--	73	1.9	0.3 U	0.29 U	0.31 U	0.29 U	0.31 U	0.3 U	0.29 U	73	0.7	0.67	0.31 U
2-Nitrotoluene	--	370	0.52 U	0.5 U	0.48 U	0.51 U	0.49 U	0.52 U	0.5 U	0.48 U	12 U	0.13 J	0.46 U	0.52 U
3,5-Dinitroaniline	--	--	1 UL	1 U	0.96 U	1 U	0.98 U	1 U	1 U	0.97 U	4.4 J	0.44 J	0.41 J	1 U
4-Amino-2,6-dinitrotoluene	--	73	0.89	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	82	1.2	1.1	0.16 U
HMX	--	1,800	23	0.15 U	2.3	0.15 U	0.29	0.24 J	0.15 UJ	0.15 U	83	1.8	1.7	0.16 U
Nitrobenzene	--	3.4	0.15 U	0.15 U	0.14 U	0.15 U	0.15 U	0.4 J	0.15 UJ	0.079 B	3.6 U	0.15 U	0.14 U	0.16 U
Nitroglycerin	--	3.7	1 U	1 U	0.96 U	1 U	0.98 U	0.57 J	1 U	0.97 U	24 U	0.98 U	0.91 U	1 U
RDX	--	0.61	18	0.25 U	0.4	0.26 U	1.9	0.26 U	0.25 U	0.24 U	300	2.4	2.3	0.26 U
Total Metals (UG/L)														
Aluminum	--	37,000	293	1,350	650	297	2,890	1,430	500	3,330	2,600	293	339	224
Antimony	6	15	60 U	2 J	60 U	60 U	60 U	2.6 J	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	10	0.045	10 U	10 U	10 U	10 U	5.8 J	8.1 J	5.2 J	11.5	7 J	4.3 J	10 U	10 U
Barium	2,000	7,300	31.8 J	50.6 J	28.6 J	15.1 J	47.4 J	40.5 J	35.5 J	26.7 J	31.6 J	31.1 J	32.3 J	19.2 J
Beryllium	4	73	5 U	5 U	5 U	0.19 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	--	--	123,000	18,000	129,000	68,200	180,000	133,000	137,000	100,000	104,000	126,000	130,000	57,600
Chromium	100	110	2.1 B	9.5 J	2.9 J	6.2 J	11.3	6.2 J	2.5 J	47.2	10.1	1.7 J	1.6 J	2.1 J
Cobalt	--	730	50 U	50 U	50 U	50 U	50 U	50 U	50 U	1.6 J	1.3 J	1.1 J	1.2 J	50 U
Copper	1,300	1,500	3.5 J	9.7 J	3.5 J	25 U	25 U	25 U	25 U	4 B	2.9 B	25 U	1.7 B	3.5 B
Iron	--	26,000	550 L	1,240 L	1,130 L	375 L	6,030 L	2,760 L	921 L	6,240	5,200	767	742	513
Lead	15	--	2.8 B	2.9 B	10 U	3 B	4.7 B	3 B	2.8 B	6.1 J	1.6 J	10 U	10 U	10 U
Magnesium	--	--	2,180 J	1,900 J	2,770 J	1,320 J	3,840 J	3,080 J	3,010 J	2,090 J	2,680 J	3,200 J	3,270 J	2,800 J
Manganese	--	880	5.8 J	6.5 J	4.8 J	2.6 J	47.6	73.5	69.4	23.7	35.5	210	213	47.1
Nickel	--	730	0.96 J	5.5 J	1.2 J	3.6 J	4.3 J	4.8 J	2.7 J	7.1 J	5.8 B	2.7 B	2.8 B	40 U
Potassium	--	--	1,820 J	37,600	1,750 J	1,050 J	2,050 J	2,520 J	2,230 J	10,600	3,120 J	2,680 J	2,720 J	2,980 J
Sodium	--	--	14,300	74,900	9,850	15,900	27,800	9,350	9,470	22,000	12,500	11,600	12,000	14,500
Vanadium	--	260	50 U	5.3 J	2 J	1.3 J	9.3 J	7.4 J	2.1 J	21.2 J	11 J	3.6 B	2 B	0.82 B
Zinc	--	11,000	7.5 J	11 J	60 U	8.4 J	10.6 J	11.3 J	4.7 J	18 B	18.4 B	12.2 B	7.6 B	7 B

Table 4-5
Analytical Detections and Exceedances for Site 8 Groundwater
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	MCL - GW	RSLs Tap for GW	YS08-GW01	YS08-GW01A	YS08-GW03	YS08-GW04	YS08-GW05	YS08-GW06		YS08-GW07	YS08-GW08	YS08-GW09		YS08-GW09A
Sample ID			YS08-GW01-1107	YS08-GW01A-1107	YS08-GW03-1107	YS08-GW04-1107	YS08-GW05-1107	YS08-GW06-1107	YS08-GW06P-1107	YS08-GW07-0808	YS08-GW08-0808	YS08-GW09-0808	YS08-GW09P-0808	YS08-GW09A-0808
Sample Date			11/13/07	11/12/07	11/13/07	11/14/07	11/14/07	11/14/07	11/14/07	08/11/08	08/13/08	08/11/08	08/11/08	08/11/08
Chemical Name														
Dissolved Metals (UG/L)														
Aluminum	--	37,000	102 J	440 J	108 J	200 U	200 B	123 B	110 B	89.8 J	200 U	200 U	200 U	200 U
Antimony	6	15	60 U	2 J	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	10	0.045	10 U	10 UJ	10 U	10 U	10 U	5.8 J	10 U	10 U	4.1 B	10 U	10 U	10 U
Barium	2,000	7,300	30 J	33.1 J	28.4 J	200 U	39.5 J	34.4 J	33.9 J	18.8 J	21.8 J	35.1 J	33 J	14.2 J
Calcium	--	--	113,000	5,830 J	129,000	70,500	170,000	131,000	130,000	82,000	102,000	124,000	126,000	54,300
Chromium	100	110	0.28 B	0.63 B	0.5 B	0.79 B	0.69 B	0.33 B	0.39 B	31.4	2.3 J	10 U	10 U	10 U
Copper	1,300	1,500	25 U	4.2 J	25 U	25 U	25 U	25 U	25 U	2.6 J	3 B	25 U	2 J	2.4 J
Iron	--	26,000	100 U	100 UJ	100 U	17.5 B	174	81.1 J	47.6 B	24.9 B	100 U	35.6 B	33.9 J	152
Lead	15	--	10 U	10 UJ	10 U	10 U	3.6 B	2.8 B	10 U	3.4 J	10 U	10 U	10 U	1.8 J
Magnesium	--	--	1,970 J	1,000 J	2,680 J	1,310 J	3,140 J	2,750 J	2,750 J	1,240 J	2,000 J	3,080 J	3,160 J	2,720 J
Manganese	--	880	0.81 B	0.8 B	0.36 B	0.53 B	3.5 J	67.6	66	4.7 B	24	201	202	45
Nickel	--	730	40 U	1.8 J	0.93 J	0.98 J	1.2 J	1.8 J	1.8 J	40 U	40 U	40 U	2 B	40 U
Potassium	--	--	1,560 J	38,400 J	1,610 J	991 J	959 J	2,030 J	2,000 J	9,840	2,200 J	2,580 J	2,670 J	3,000 J
Sodium	--	--	13,200	68,000 J	10,000	16,400	28,000	9,280	9,110	22,200	12,200	11,700	11,800	14,200
Vanadium	--	260	50 U	2.9 J	50 U	50 U	50 U	50 U	50 U	2 B	1.1 J	0.6 B	0.85 B	50 U
Wet Chemistry (MG/L)														
Alkalinity	--	--	270	NA	NA	NA	NA	280	NA	160	240	300	310	150
Carbon	--	--	0.5 U	NA	NA	NA	NA	2	NA	1	1	2	2	1
Chloride	--	--	22	NA	NA	NA	NA	17	NA	30	10	17	17	6
Ethane	--	--	3.50E-04 U	NA	NA	NA	NA	3.50E-04 U	NA	3.50E-04 U	3.70E-04	8.30E-04	1.00E-03	4.20E-04
Ethene	--	--	3.30E-04 U	NA	NA	NA	NA	3.30E-04 U	NA	3.30E-04 U	3.30E-04 U	4.90E-04	5.50E-04	3.30E-04 U
Methane	--	--	2.20E-04	NA	NA	NA	NA	7.30E-04	NA	6.00E-04	0.01	0.17	0.19	0.0021
Nitrate	10	58	0.2 H	NA	NA	NA	NA	0.006 U	NA	0.5	0.9	0.009 B	0.008 B	0.006 U
Nitrite	1	3.7	0.008 UH	NA	NA	NA	NA	0.008 U	NA	0.008 U	0.08	0.008 U	0.008 U	0.008 U
Sulfate	--	--	23	NA	NA	NA	NA	49	NA	48	20	22	21	17
Sulfide	--	--	38	NA	NA	NA	NA	1 U	NA	1 U	1 U	1 U	1 U	1 U
Dechlorinating Bacteria (CELL/ML)														
Dehalococcoides	--	--	10.9	NA	NA	NA	NA	1.26	NA	NA	NA	NA	NA	NA

Notes:

Exceeds one or more criteria

B - Analyte not detected above the level reported in blanks

H

J - Analyte present, value may or may not be accurate or precise

L - Analyte present, value may be biased low, actual value may be higher

NA - Not analyzed

U - The material was analyed for, but not detected

UH

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

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LEGEND

- Study Area Boundary*
- Drainage Channel
- Existing Monitoring Well (location surveyed)
- Unable to locate well since Spring 2003, possibly graded over

*All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

N

0 50 100 Feet

Figure 4-1
Site 8 Layout
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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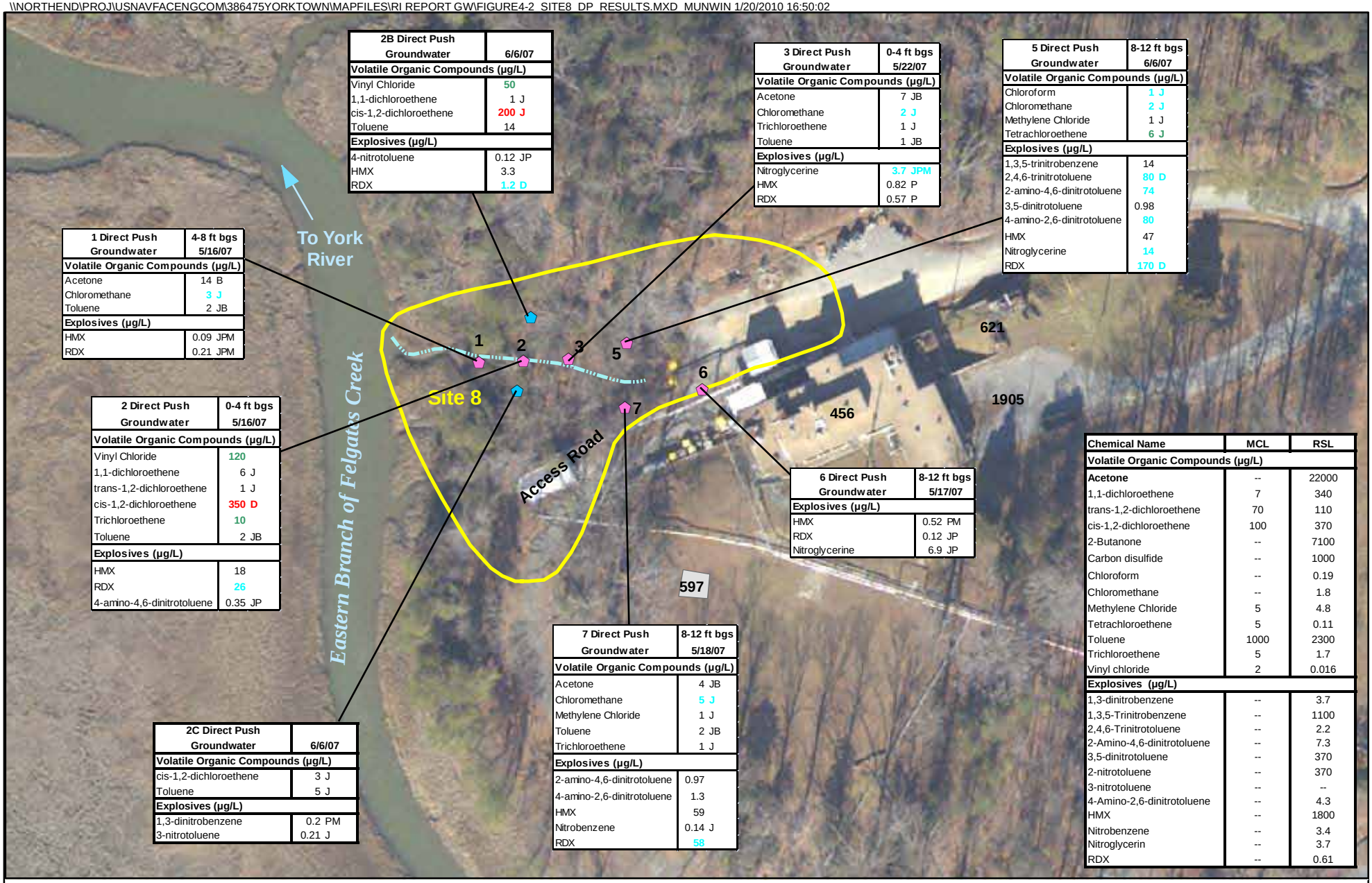
\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\RI REPORT GW\FIGURE4-2_SITE8_DP_RESULTS.MXD MUNWIN 1/20/2010 16:50:02



2B Direct Push Groundwater	6/6/07
Volatile Organic Compounds (µg/L)	
Vinyl Chloride	50
1,1-dichloroethene	1 J
cis-1,2-dichloroethene	200 J
Toluene	14
Explosives (µg/L)	
4-nitrotoluene	0.12 JP
HMX	3.3
RDX	1.2 D

3 Direct Push Groundwater	0-4 ft bgs 5/22/07
Volatile Organic Compounds (µg/L)	
Acetone	7 JB
Chloromethane	2 J
Trichloroethene	1 J
Toluene	1 JB
Explosives (µg/L)	
Nitroglycerine	3.7 JPM
HMX	0.82 P
RDX	0.57 P

5 Direct Push Groundwater	8-12 ft bgs 6/6/07
Volatile Organic Compounds (µg/L)	
Chloroform	1 J
Chloromethane	2 J
Methylene Chloride	1 J
Tetrachloroethene	6 J
Explosives (µg/L)	
1,3,5-trinitrobenzene	14
2,4,6-trinitrotoluene	80 D
2-amino-4,6-dinitrotoluene	74
3,5-dinitrotoluene	0.98
4-amino-2,6-dinitrotoluene	80
HMX	47
Nitroglycerine	14
RDX	170 D

1 Direct Push Groundwater	4-8 ft bgs 5/16/07
Volatile Organic Compounds (µg/L)	
Acetone	14 B
Chloromethane	3 J
Toluene	2 JB
Explosives (µg/L)	
HMX	0.09 JPM
RDX	0.21 JPM

2 Direct Push Groundwater	0-4 ft bgs 5/16/07
Volatile Organic Compounds (µg/L)	
Vinyl Chloride	120
1,1-dichloroethene	6 J
trans-1,2-dichloroethene	1 J
cis-1,2-dichloroethene	350 D
Trichloroethene	10
Toluene	2 JB
Explosives (µg/L)	
HMX	18
RDX	26
4-amino-4,6-dinitrotoluene	0.35 JP

6 Direct Push Groundwater	8-12 ft bgs 5/17/07
Explosives (µg/L)	
HMX	0.52 PM
RDX	0.12 JP
Nitroglycerine	6.9 JP

7 Direct Push Groundwater	8-12 ft bgs 5/18/07
Volatile Organic Compounds (µg/L)	
Acetone	4 JB
Chloromethane	5 J
Methylene Chloride	1 J
Toluene	2 JB
Trichloroethene	1 J
Explosives (µg/L)	
2-amino-4,6-dinitrotoluene	0.97
4-amino-2,6-dinitrotoluene	1.3
HMX	59
Nitrobenzene	0.14 J
RDX	58

2C Direct Push Groundwater	6/6/07
Volatile Organic Compounds (µg/L)	
cis-1,2-dichloroethene	3 J
Toluene	5 J
Explosives (µg/L)	
1,3-dinitrobenzene	0.2 PM
3-nitrotoluene	0.21 J

Chemical Name	MCL	RSL
Volatile Organic Compounds (µg/L)		
Acetone	--	22000
1,1-dichloroethene	7	340
trans-1,2-dichloroethene	70	110
cis-1,2-dichloroethene	100	370
2-Butanone	--	7100
Carbon disulfide	--	1000
Chloroform	--	0.19
Chloromethane	--	1.8
Methylene Chloride	5	4.8
Tetrachloroethene	5	0.11
Toluene	1000	2300
Trichloroethene	5	1.7
Vinyl chloride	2	0.016
Explosives (µg/L)		
1,3-dinitrobenzene	--	3.7
1,3,5-Trinitrobenzene	--	1100
2,4,6-Trinitrotoluene	--	2.2
2-Amino-4,6-dinitrotoluene	--	7.3
3,5-dinitrotoluene	--	370
2-nitrotoluene	--	370
3-nitrotoluene	--	--
4-Amino-2,6-dinitrotoluene	--	4.3
HMX	--	1800
Nitrobenzene	--	3.4
Nitroglycerin	--	3.7
RDX	--	0.61

LEGEND

- Study Area Boundary
- Drainage Channel
- Initial DPT Location
- Secondary DPT Locations

MCL - Maximum Contaminant Level
RSL - Risk Screening Level
µg/L - micrograms per Liter
HMX - 1,3,5,7-tetranitro-1,3,5,7-tetrazocane
RDX - 1,3,5-Trinitroperhydro-1,3,5-triazine
B - Possible Blank Contamination
D - Diluted Result
J - Value is estimated
M - Duplicate Injection Precision Not Met

Exceeds MCL Criteria Only
Exceeds RSL Criteria Only
Exceeds both MCL and RSL Criteria

P - RPD Between 2 columns is > 40
ft bgs - feet below ground surface
*Indicates duplicate sample, most conservative value used

N

0 40 80 Feet

Figure 4-2
Site 8 Direct Push Sampling Results
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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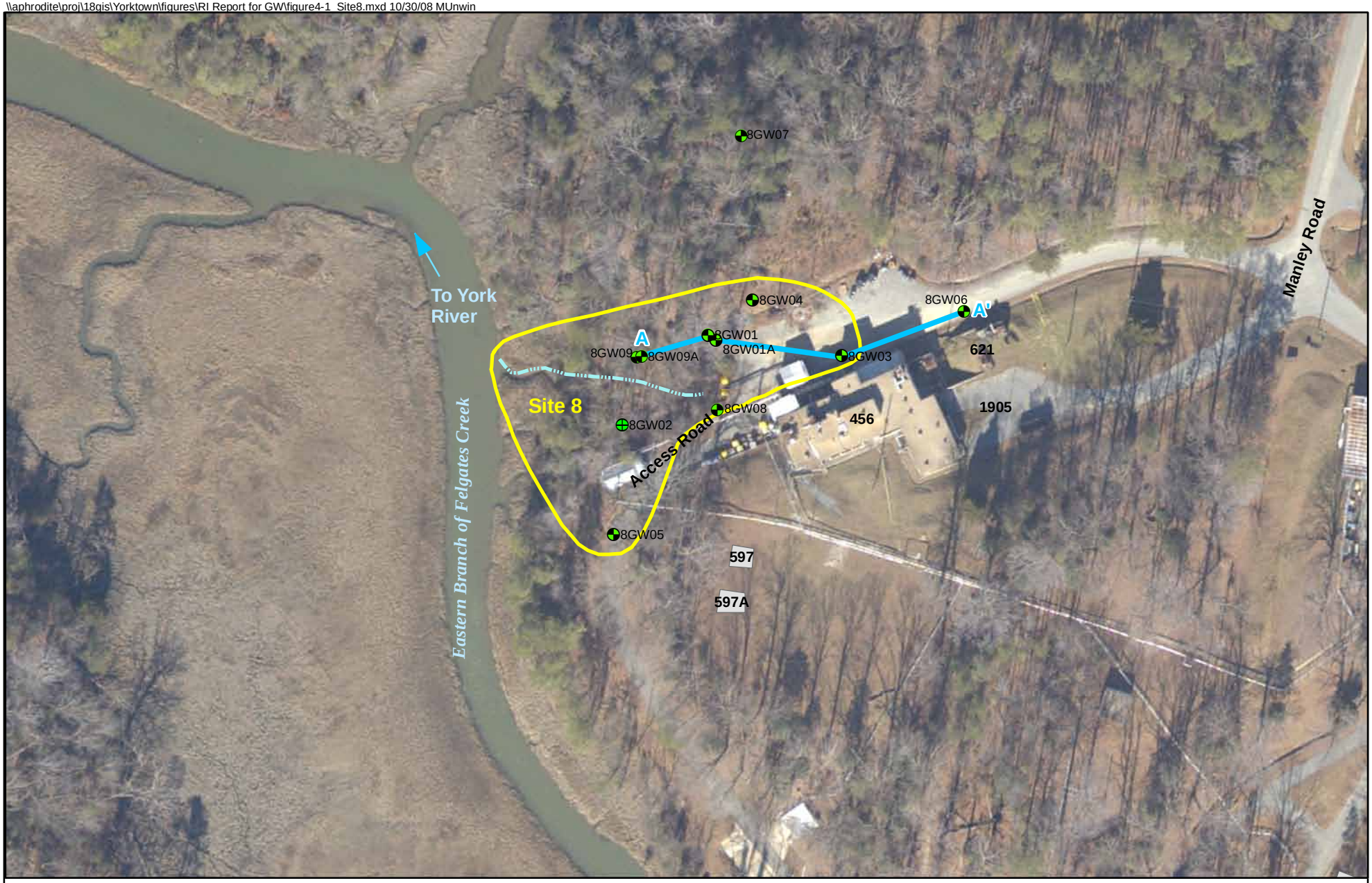

LEGEND

- Study Area
- Drainage Channel
- Existing Monitoring Well (location surveyed)
- Unable to locate well since Spring 2003, possibly graded over

N

0 50 100 Feet

Figure 4-3
Location of Geological Cross Section for Site 8
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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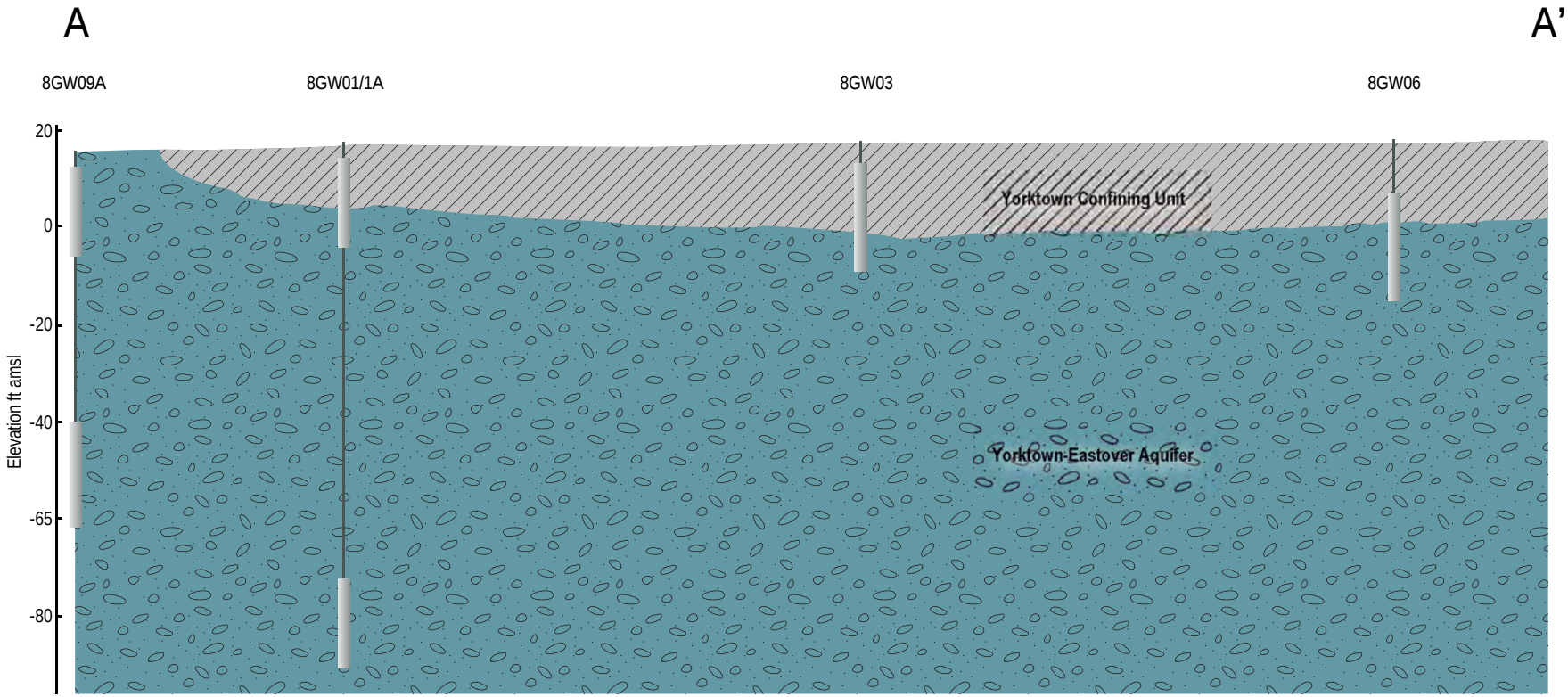

LEGEND

Yorktown-Eastover Aquifer

Yorktown Confining Unit

Figure 4-4
Geologic Cross Section for Site 8
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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ES102008026WDC Figure4-4_v3.ai

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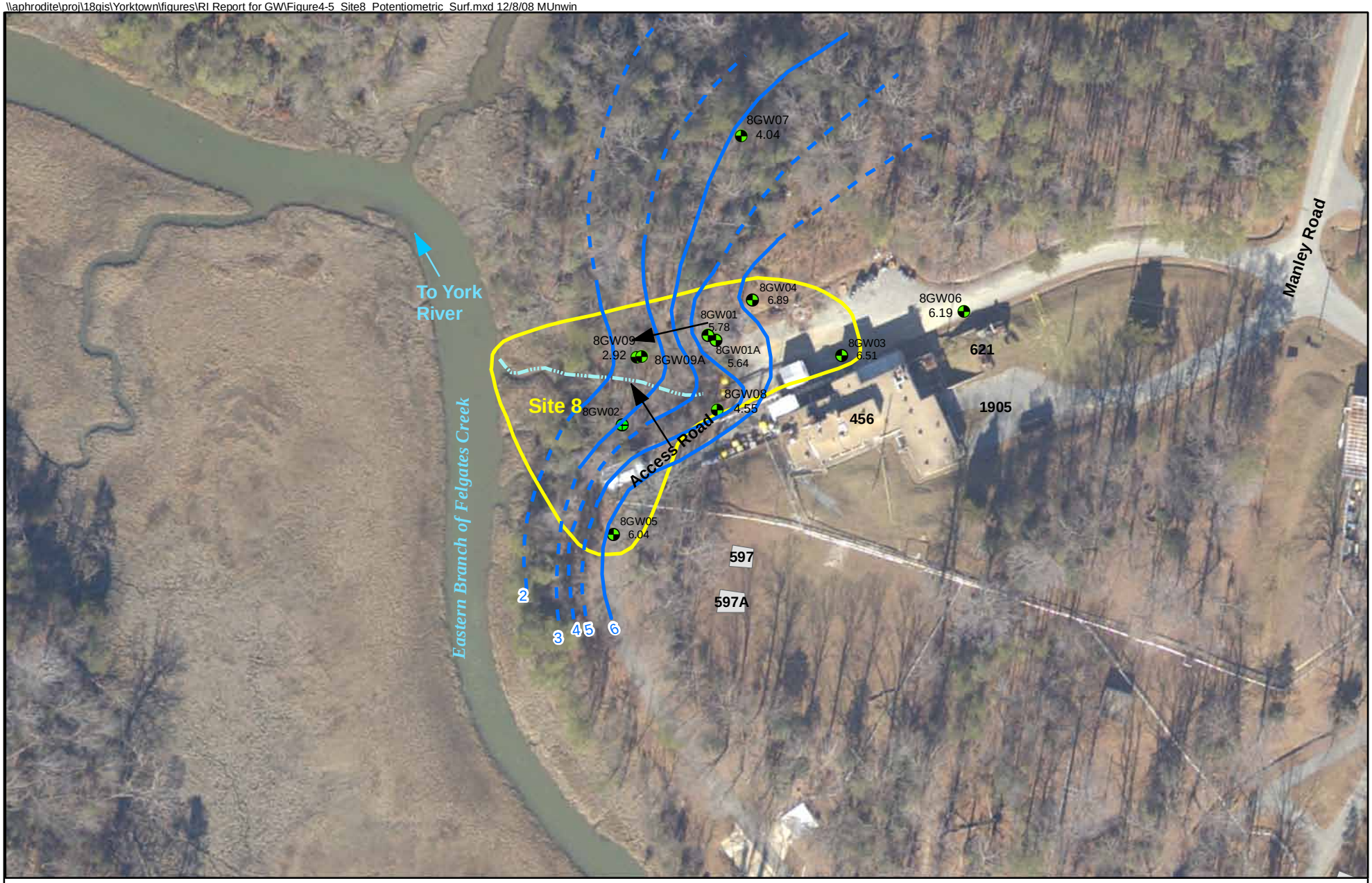

LEGEND

- Study Area
- Drainage Channel
- Existing Monitoring Well (location surveyed)
- Unable to locate well since Spring 2003, possibly graded over
- Elevation Contour
- Elevation Contour (Inferred)
- Groundwater Flow

N

0 50 100 Feet

Figure 4-5
Site 8 Potentiometric Surface Map
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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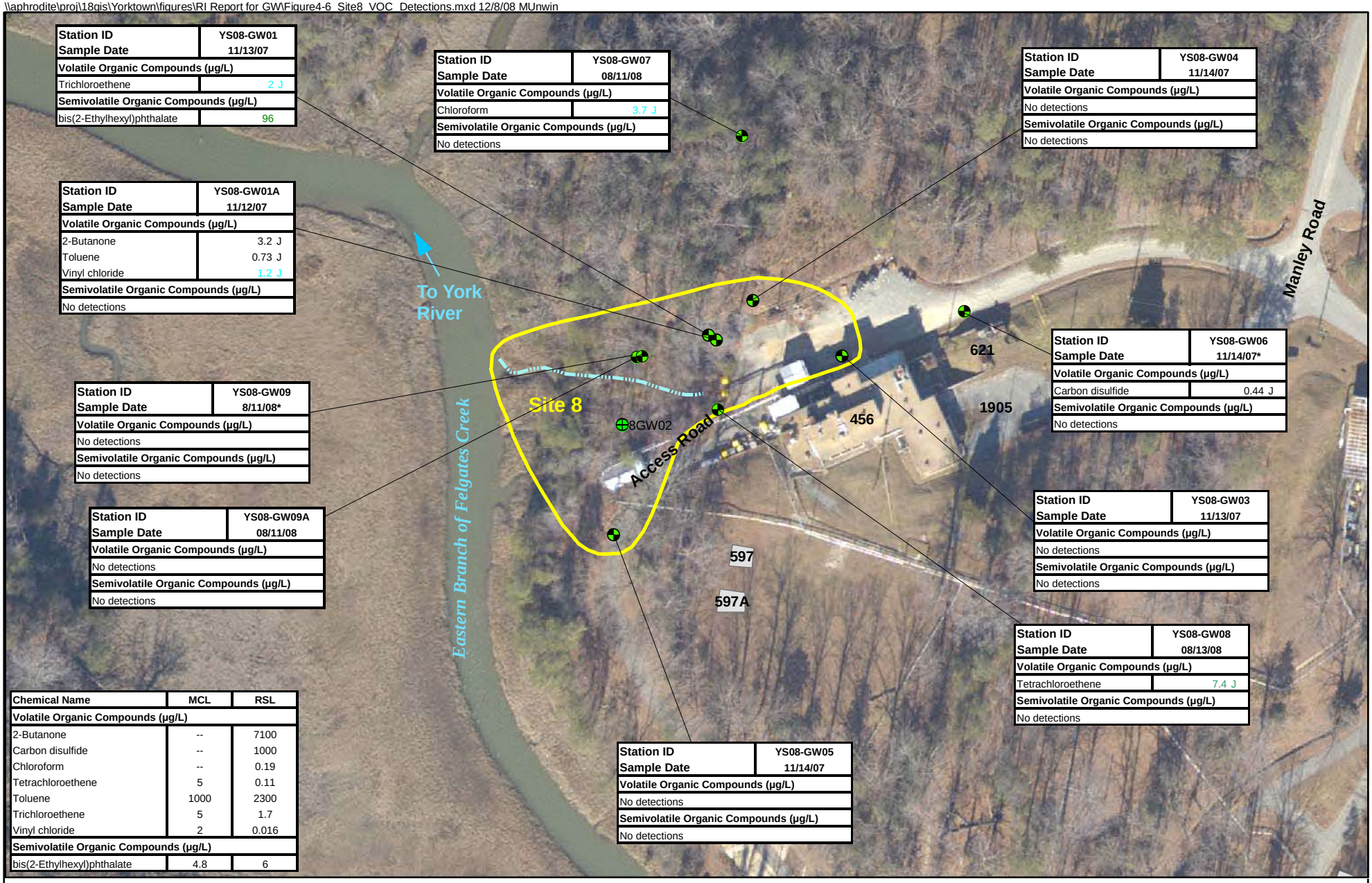

Station ID	YS08-GW01
Sample Date	11/13/07
Volatile Organic Compounds (µg/L)	
Trichloroethene	2 J
Semivolatile Organic Compounds (µg/L)	
bis(2-Ethylhexyl)phthalate	96

Station ID	YS08-GW07
Sample Date	08/11/08
Volatile Organic Compounds (µg/L)	
Chloroform	3.7 J
Semivolatile Organic Compounds (µg/L)	
No detections	

Station ID	YS08-GW04
Sample Date	11/14/07
Volatile Organic Compounds (µg/L)	
No detections	
Semivolatile Organic Compounds (µg/L)	
No detections	

Station ID	YS08-GW01A
Sample Date	11/12/07
Volatile Organic Compounds (µg/L)	
2-Butanone	3.2 J
Toluene	0.73 J
Vinyl chloride	1.2 J
Semivolatile Organic Compounds (µg/L)	
No detections	

Station ID	YS08-GW06
Sample Date	11/14/07*
Volatile Organic Compounds (µg/L)	
Carbon disulfide	0.44 J
Semivolatile Organic Compounds (µg/L)	
No detections	

Station ID	YS08-GW09
Sample Date	8/11/08*
Volatile Organic Compounds (µg/L)	
No detections	
Semivolatile Organic Compounds (µg/L)	
No detections	

Station ID	YS08-GW03
Sample Date	11/13/07
Volatile Organic Compounds (µg/L)	
No detections	
Semivolatile Organic Compounds (µg/L)	
No detections	

Station ID	YS08-GW09A
Sample Date	08/11/08
Volatile Organic Compounds (µg/L)	
No detections	
Semivolatile Organic Compounds (µg/L)	
No detections	

Station ID	YS08-GW08
Sample Date	08/13/08
Volatile Organic Compounds (µg/L)	
Tetrachloroethene	7.4 J
Semivolatile Organic Compounds (µg/L)	
No detections	

Station ID	YS08-GW05
Sample Date	11/14/07
Volatile Organic Compounds (µg/L)	
No detections	
Semivolatile Organic Compounds (µg/L)	
No detections	

Chemical Name	MCL	RSL
Volatile Organic Compounds (µg/L)		
2-Butanone	--	7100
Carbon disulfide	--	1000
Chloroform	--	0.19
Tetrachloroethene	5	0.11
Toluene	1000	2300
Trichloroethene	5	1.7
Vinyl chloride	2	0.016
Semivolatile Organic Compounds (µg/L)		
bis(2-Ethylhexyl)phthalate	4.8	6

LEGEND

- Study Area Boundary
- Drainage Channel
- Existing Monitoring Well (location surveyed)
- Unable to locate well since Spring 2003, possibly graded over

Exceeds MCL Criteria Only
Exceeds RSL Criteria Only
Exceeds both MCL and RSL Criteria

*Indicates duplicate sample, most conservative value used
MCL - Maximum Contaminant Level
RSL - Risk Screening Level
µg/L - micrograms per liter
J - Value is estimated

N

0 50 100 Feet

Figure 4-6
Site 8 VOC and SVOC Detections and Exceedances
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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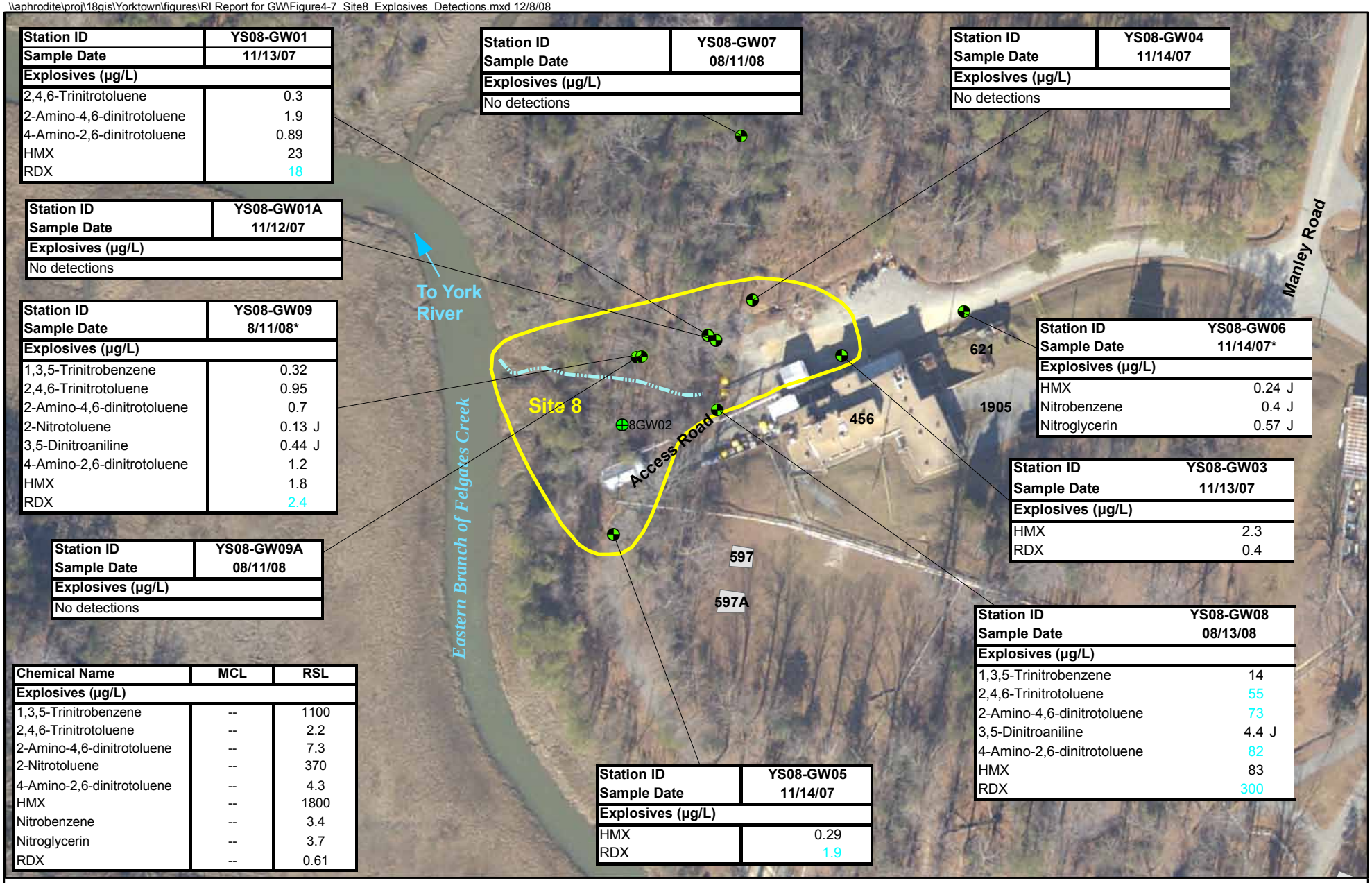

Station ID	YS08-GW01
Sample Date	11/13/07
Explosives (µg/L)	
2,4,6-Trinitrotoluene	0.3
2-Amino-4,6-dinitrotoluene	1.9
4-Amino-2,6-dinitrotoluene	0.89
HMX	23
RDX	18

Station ID	YS08-GW07
Sample Date	08/11/08
Explosives (µg/L)	
No detections	

Station ID	YS08-GW04
Sample Date	11/14/07
Explosives (µg/L)	
No detections	

Station ID	YS08-GW01A
Sample Date	11/12/07
Explosives (µg/L)	
No detections	

Station ID	YS08-GW09
Sample Date	8/11/08*
Explosives (µg/L)	
1,3,5-Trinitrobenzene	0.32
2,4,6-Trinitrotoluene	0.95
2-Amino-4,6-dinitrotoluene	0.7
2-Nitrotoluene	0.13 J
3,5-Dinitroaniline	0.44 J
4-Amino-2,6-dinitrotoluene	1.2
HMX	1.8
RDX	2.4

Station ID	YS08-GW06
Sample Date	11/14/07*
Explosives (µg/L)	
HMX	0.24 J
Nitrobenzene	0.4 J
Nitroglycerin	0.57 J

Station ID	YS08-GW03
Sample Date	11/13/07
Explosives (µg/L)	
HMX	2.3
RDX	0.4

Station ID	YS08-GW09A
Sample Date	08/11/08
Explosives (µg/L)	
No detections	

Chemical Name	MCL	RSL
Explosives (µg/L)		
1,3,5-Trinitrobenzene	--	1100
2,4,6-Trinitrotoluene	--	2.2
2-Amino-4,6-dinitrotoluene	--	7.3
2-Nitrotoluene	--	370
4-Amino-2,6-dinitrotoluene	--	4.3
HMX	--	1800
Nitrobenzene	--	3.4
Nitroglycerin	--	3.7
RDX	--	0.61

Station ID	YS08-GW08
Sample Date	08/13/08
Explosives (µg/L)	
1,3,5-Trinitrobenzene	14
2,4,6-Trinitrotoluene	55
2-Amino-4,6-dinitrotoluene	73
3,5-Dinitroaniline	4.4 J
4-Amino-2,6-dinitrotoluene	82
HMX	83
RDX	300

Station ID	YS08-GW05
Sample Date	11/14/07
Explosives (µg/L)	
HMX	0.29
RDX	1.9

LEGEND

- Study Area Boundary
- Drainage Channel
- Existing Monitoring Well (location surveyed)
- Unable to locate well since Spring 2003, possibly graded over

Exceeds MCL Criteria Only
Exceeds RSL Criteria Only
Exceeds both MCL and RSL Criteria

*Indicates duplicate sample, most conservative value used
RSL - Risk Screening Level
MCL - Maximum Contaminant Level
µg/L - micrograms per liter
HMX - 1,3,5,7-tetranitro-1,3,5,7-tetrazocane
RDX - 1,3,5-Trinitroperhydro-1,3,5-triazine
J - Value is estimated

N

0 50 100 Feet

Figure 4-7
Site 8 Explosives Detections and Exceedances
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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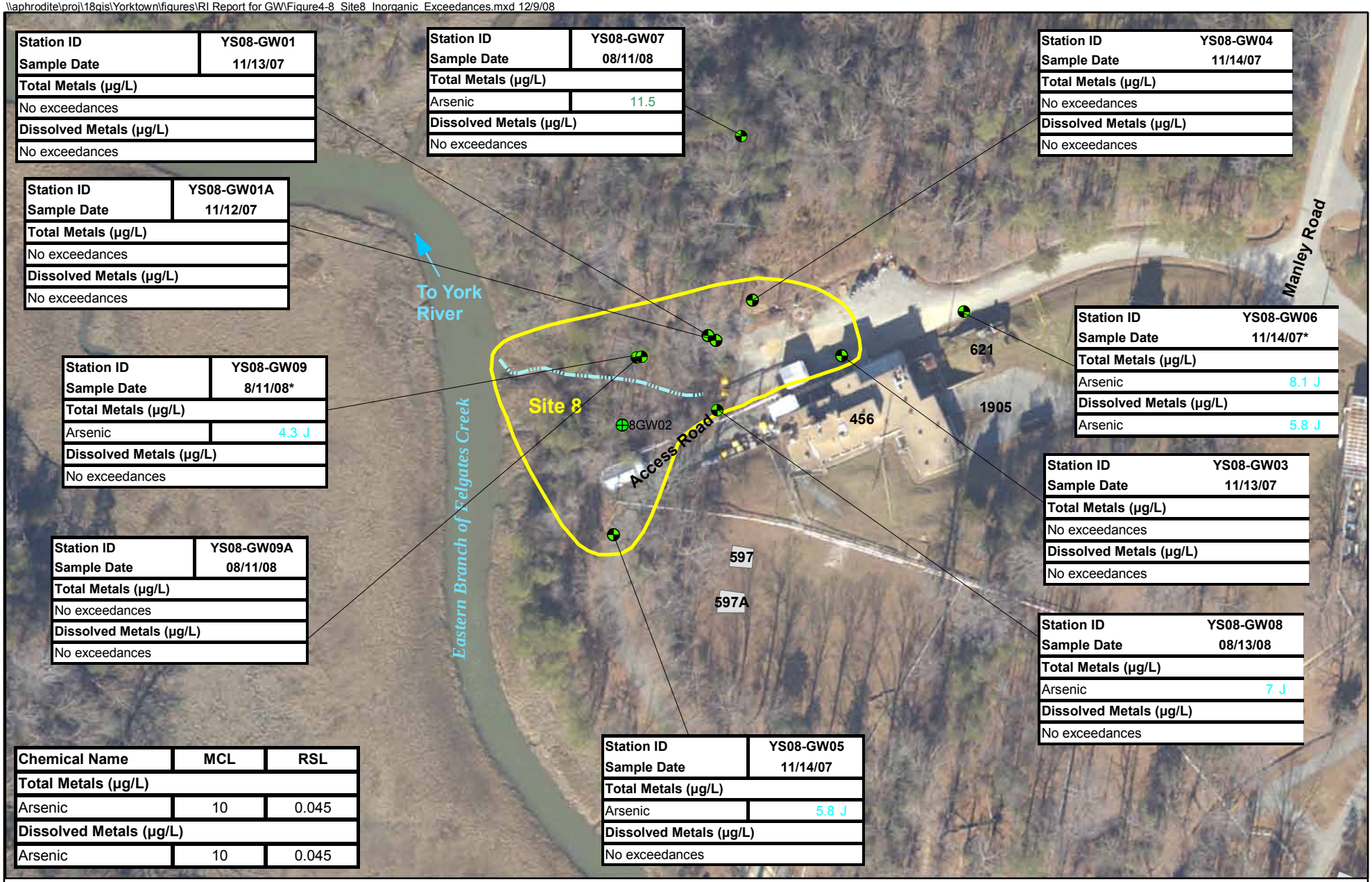

Station ID	YS08-GW01
Sample Date	11/13/07
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
No exceedances	

Station ID	YS08-GW07
Sample Date	08/11/08
Total Metals (µg/L)	
Arsenic	11.5
Dissolved Metals (µg/L)	
No exceedances	

Station ID	YS08-GW04
Sample Date	11/14/07
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
No exceedances	

Station ID	YS08-GW01A
Sample Date	11/12/07
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
No exceedances	

Station ID	YS08-GW06
Sample Date	11/14/07*
Total Metals (µg/L)	
Arsenic	8.1 J
Dissolved Metals (µg/L)	
Arsenic	5.8 J

Station ID	YS08-GW09
Sample Date	8/11/08*
Total Metals (µg/L)	
Arsenic	4.3 J
Dissolved Metals (µg/L)	
No exceedances	

Station ID	YS08-GW03
Sample Date	11/13/07
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
No exceedances	

Station ID	YS08-GW09A
Sample Date	08/11/08
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
No exceedances	

Station ID	YS08-GW08
Sample Date	08/13/08
Total Metals (µg/L)	
Arsenic	7 J
Dissolved Metals (µg/L)	
No exceedances	

Chemical Name	MCL	RSL
Total Metals (µg/L)		
Arsenic	10	0.045
Dissolved Metals (µg/L)		
Arsenic	10	0.045

Station ID	YS08-GW05
Sample Date	11/14/07
Total Metals (µg/L)	
Arsenic	5.8 J
Dissolved Metals (µg/L)	
No exceedances	

LEGEND

- Study Area Boundary
- Drainage Channel
- Existing Monitoring Well (location surveyed)
- Unable to locate well since Spring 2003, possibly graded over

Exceeds MCL Criteria Only
Exceeds RSL Criteria Only
Exceeds both MCL and RSL Criteria

*Indicates duplicate sample, most conservative value used
RSL - Risk Screening Level
MCL - Maximum Contaminant Level
µg/L - micrograms per liter
J - Value is estimated

N

0 50 100 Feet

Figure 4-8
Site 8 Inorganic Exceedances in Groundwater
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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SECTION 5

Site 34 Remedial Investigation Results for Groundwater

This section includes background information, investigation results, and nature and extent of groundwater contamination at Site 34.

5.1 Location, Setting, History, and Hydrogeology

Site 34, The Building 537 Discharge to Felgates Creek, is approximately 0.4 acres in size and is located in the north-central part of WPNSTA Yorktown (**Figures 2-1 and 5-1**). A one-lane asphalt road encircles Buildings 460, 459, 537, 458, and 651, which are concrete bunkers set into a hillside. South of the road, the sparsely wooded terrain slopes steeply to a flat marsh wetland area north of the main channel of the Eastern Branch of Felgates Creek . Site 34 consists of a pipe which originates at Building 537 and extends south to Felgates Creek. Nitramine-contaminated wastewater was reportedly discharged through the pipe.

The surface geology at Site 34 consists of approximately 10 ft of silt and clay consistent with the Yorktown confining unit. This silt and clay unit overlies the Yorktown-Eastover aquifer which consists predominantly of sand, but includes an approximately 10 ft thick clay lens at 30–40 ft bgs at Site 34. Based on the USGS study conducted at WPNSTA Yorktown (Brockman et al., 1997), the Yorktown-Eastover aquifer is approximately 80 ft thick near Site 34. Depth to groundwater at the site is between 10 and 12 ft bgs. Groundwater flows south toward the Eastern Branch of Felgates Creek.

5.2 Previous Investigations

Several investigations and a removal action have been completed at the site. Results of this work are included in the following documents and summarized below:

Title	Author/Date	Administrative Record #
Relative Risk Ranking System, Data Collection Investigation, Naval Weapons Station Yorktown, Yorktown, Virginia.	Baker, 1995b	00675
Final Round Two Remedial Investigation Report for Sites 2, 8, 18, and Site Screening Area 14. Naval Weapons Station Yorktown, Yorktown, Virginia	Baker, 2004	01548
Work Plan for the Pre-Removal Characterization of Soils, Sites 2, 18, SSA 14	Baker, 2005b	01687
EE/CA for Contaminated Soil and Sediment, Site 8 and SSA 14	Baker, 2005c	02076
Action Memorandum for Contaminated Soil and Sediment, Site 8 and SSA 14	Baker, 2005d	01871
Work Plan Interim Removal Action, Site 8 and SSA 14	Shaw, 2006	01890

Title	Author/Date	Administrative Record #
ESS Determination for Soil and Sediments, Site 8 and SSA 14	NOSSA, 2006	02033
RI Work Plan for Groundwater, Sites 4, 8, 21, 22, and SSA 14	CH2M HILL, 2007	02153
Final Construction Completion Report, Site 8 and SSA 14	Shaw, 2009	No admin record number yet

Site 34 is a discharge area from Building 537 through which nitramine-contaminated wastewater was reportedly discharged to the Eastern Branch of Felgates Creek (Baker, 1995a). Potential human health risks were identified in drainage area soils from exposure to explosives and inorganics, and in groundwater from exposure to VOCs; potential ecological risks were identified in drainage area soils and sediments from exposure to VOCs, explosives, and inorganics, and in surface water from exposure to explosives and inorganics (Baker, 2004).

In 2005, soil and sediment sampling was conducted within the drainage area to support removal action. Sampling results were used to complete an EE/CA (Baker, 2005c) and Action Memorandum (Baker, 2005d) for a NTCRA. The EE/CA recommended excavation with off-site disposal of contaminated soils and sediments within the drainage channel to mitigate potential unacceptable human health and ecological risks. Cleanup goals were developed as part of this EE/CA for protection of human health and ecological receptors.

The drainage area removal action was completed in 2008 (Shaw, 2008). While the source area has been removed, potential impacts to groundwater and potential transport in groundwater to nearby surface water bodies were not addressed. The purpose of this RI was to investigate these dynamic media.

5.3 Field Activities and Investigation Results

5.3.1 Membrane Interface Probe Sample Results

A MIP study was conducted at Site 34 in March and April of 2007 in accordance with the decision diagram shown on **Figure 5-2**. The objective of the study was to better determine the horizontal and vertical distribution of chlorinated VOCs. Details regarding how this investigation was conducted are included in Section 3.3. Full study results are presented in **Appendix F** and summarized below.

The MIP investigation grid with color-coded ECD responses is shown on **Figure 5-3**. This grid was extended eastward from what was approved in the work plan to further evaluate this area. The results of this investigation are presented in plane view (**Figure 5-4**) and cross section view (**Figure 5-5**). These results indicate that the maximum ECD response zone (or possible VOC plume core) is located east of the Building 537 discharge pipe, and immediately downgradient from an area between Buildings 537 and 458. The results also indicate that the maximum ECD response zone is located between 10 and 40 ft bgs, and appears to be constrained vertically by fine-grained lithology at about 40 ft bgs.

Based on the results of this investigation, a DPT groundwater sample was collected from 32-36 ft bgs to further investigate the maximum ECD response zone. Details regarding the DPT groundwater sample results are presented in Section 5.3.2.

5.3.2 Direct Push Technology Sampling Results

Based on the results of the MIP study (Section 5.3.1), a DTP groundwater sample was collected east of the Building 537 discharge pipe, and immediately downgradient from an area between Buildings 537 and 458. The purpose of this sample was to investigate the maximum ECD response zone identified during the MIP study. This sample was collected in April 2007 from a depth of 32-36 ft bgs and evaluated for chlorinated VOCs and explosives. DPT results are presented on **Figure 5-6**. Raw data are included in **Appendix D**.

DPT sample results indicated that a number of VOCs were present in groundwater at concentrations exceeding MCLs and/or RSLs, but no explosives were detected at this depth. VOCs that exceeded MCLs included 1,1-DCE (640 D µg/L), cis-1,2-DCE (150 JD µg/L), 1,1,1-trichloroethane (1,1,1-TCA) (210 D µg/L), and TCE (1,800 D µg/L).

Based on the DPT results, monitoring well pair A14GW05 (10-30 ft bgs) and A14GW05A (30-50 ft bgs) were installed. Details regarding these new monitoring wells are discussed in Section 5.3.3.

5.3.3 Monitoring Well Installation

Two new monitoring wells were installed in support of the groundwater RI at Site 34 based on the results of the MIP (Section 5.3.1) and DTP (Section 5.3.2) investigations.

- **A14GW05—**Shallow monitoring well screened within the top of the Yorktown-Eastover aquifer to investigate the MIP maximum ECD response zone where follow-up DPT sampling indicated elevated levels of VOCs. The maximum ECD zone was identified at 10-40 ft bgs, and this well was screened from 10-30 ft bgs and analyzed for VOCs, explosives, and inorganics.
- **A14GW05A—**Deeper monitoring well screened within the middle portions of the Yorktown-Eastover aquifer to investigate the MIP maximum ECD response zone. The maximum ECD zone was identified at 10-40 ft bgs, and this well was screened from 30-50 ft bgs and analyzed for VOCs, explosives, and inorganics.

General well installation procedures are described in Section 3.3. Monitoring well construction details for new and existing wells are tabulated on **Table 5-1,** and locations are shown on **Figure 5-1**. Hydrogeologic cross sections are included on **Figures 5-7 and 5-8**. Boring logs and construction diagrams are included in **Appendix A**.

5.3.4 Groundwater Sampling and Results of Field Water Quality Measurement

Groundwater samples were collected from existing (i.e., A14GW01, 01A, 02, 03, and 04A) and new (i.e., A14GW05 and 05A) monitoring wells in accordance with procedures described in Section 3.5. Field parameters were collected during groundwater purging and are presented as **Table 5-2**.

Based on the Horiba water quality indicator, DO concentrations at the site ranged from 0.23 mg/L to 5.03 mg/L. ORP results ranged from -167 mV to 74 mV. The DO meter

appears to have been malfunctioning during purging because the corresponding ORP for the well in which a DO of 5.03 mg/L was measured was only -57 mV. This DO concentration is very high and would be expected to correspond to a much higher ORP value. Chemets™ results ranged from 0.6 mg/L to 1 mg/L, and were generally more consistent with the ORP results. In general, DO and ORP results indicated slightly oxidizing to reducing conditions. Groundwater pH was relatively neutral, ranging from 6.89 to 7.54. Salinity results ranged from 0.02 percent to 0.04 percent, indicating fresh water across the site. Specific conductance values ranged from 0.439 mS/cm to 0.867 mS/cm across the site, indicating a slight ionic potential in site groundwater. Following purging and collection of field parameters, Site 34 wells were sampled for TCL VOCs, explosives, and TAL total and dissolved metals using low flow purging methodology. Pesticide, PCB, and SVOC samples were not collected because these chemicals were not detected at concentrations posing risk during previous investigations as described in the work plan. Additionally, YSA14-GW05 and YSA14-GW05A were sampled for alkalinity, chloride, nitrate, nitrite, sulfate, sulfide, TOC, and *Dehalococcoides sp.* to evaluate the potential for natural attenuation of groundwater contaminants.

5.3.5 Water Level Survey

Groundwater elevations were measured from monitoring wells on January 15, 2008 in accordance with Section 3.6. Results are included in **Table 5-3** and presented on **Figure 5-9.** The results indicate the shallow groundwater within the Yorktown-Eastover flows southward and discharges to the Eastern Branch of Felgates Creek.

5.3.6 Slug Testing

Aquifer testing was completed at two monitoring wells (A14GW01 and A14GW01A). Results are included in **Table 5-4**. Rising and falling head tests were completed for well A14GW01A. Only the rising head test was conducted at well A14GW01 since the static water level was located below the top of the well screen and the falling head test could result in water draining from the well into the gravel pack and vadose zone providing an overestimation of the hydraulic conductivity. Results indicate that the average horizontal hydraulic conductivity within the Yorktown-Eastover aquifer was 4.53 ft/day.

5.4 Groundwater Analytical Results and Nature and Extent of Groundwater Contamination

Groundwater samples were collected from all seven monitoring wells for VOCs, explosives, and total and dissolved metals to determine the nature and extent of contamination. Analytical detections are summarized in **Table 5-5**. Raw results are included in **Appendix D**. Analytical results are summarized by contaminant type below.

5.4.1 TCL VOCs Results

Eleven VOCs were detected in groundwater at Site 34 with the highest concentrations in the vicinity of Buildings 537 and 458 (**Figure 5-10**). TCE, cis-1,2-DCE, and 1,1-DCE were detected above their respective MCLs of 5 µg/L, 70 µg/L, and 7 µg/L in samples from YSA14-GW01 and YSA14-GW05. In the sample from YSA14-GW01, TCE, cis-1,2-DCE, and 1,1-DCE were detected at concentrations of 1,400 µg/L, 110 µg/L, and 400 µg/L, respectively. In the sample from YSA14-GW05, TCE, cis-1,2-DCE, and 1,1-DCE were

detected at concentrations of 1,400 µg/L, 130 µg/L, and 320 µg/L, respectively. 1.1-DCA was also detected at a concentration greater than the MCL in the sample from YSA14-GW05 (47 µg/L). The only other shallow monitoring well sample in which VOCs were detected above MCLs was the sample from YSA14-GW03. Concentrations detected in the sample from YSA14-GW03 were substantially less than the concentrations detected in the other samples (TCE = 46 µg/L, cis-1,2-DCE = non-detect, and 1,1-DCE = 12 µg/L). Other VOCs (1,1,2-TCA, PCE and 1,2-DCA) were detected at concentrations exceeding RSLs, but not MCLs in one or more samples. The data indicate that VOCs are somewhat constrained to the upper portions of the Yorktown-Eastover. For example, TCE concentrations decrease from 1,400 µg/L at A14GW05 (10-30 ft bgs), to 64 µg/L at A14GW05A (30-50 ft bgs), to 4.1 B µg/L at A14GW01A (70-80 ft bgs). This is consistent with the results of the MIP study (**Figure 5-5**).

5.4.2 Explosives Results

Six explosives were detected in Site 34 groundwater. One or more explosives was detected in every shallow well at the site. However, only concentrations of RDX and nitrobenzene exceeded RSLs (there are no MCLs for comparison purposes). Maximum concentrations of RDX were identified in groundwater from shallow monitoring well A14GW02, which is located more than 100 ft west and cross-gradient of the Building 537 discharge pipe. This well identified 34 µg/L of RDX, which is well above the screening level of 0.61 µg/L. The next highest detection of RDX was at shallow well A14GW01 (5.5 µg/L) located adjacent to and east of the discharge pipe. The distribution of the explosives indicates these contaminants may be related to the discharge pipe. The only other compound detected above screening levels was nitrobenzene. This compound was detected in deep upgradient monitoring well A14GW04A (92-100 ft bgs) at 13 µg/L, which is slightly above the screening level of 3.4 µg/L. The relationship of this detection to the discharge pipe indicates it is not site-related, and this result is questionable since no explosives had been detected in this well during previous investigations. **Figure 5-11** shows the spatial distribution of explosive compounds detected in site groundwater.

5.4.3 Total Inorganics

Of the 24 TAL inorganics analyzed, 18 were detected. Antimony, cadmium, cyanide, mercury, selenium, silver, and thallium were not detected in any of the samples. Arsenic and chromium were detected concentrations greater than corresponding MCLs and/or RSLs. Highest concentrations of these inorganics were detected in the sample from YSA14-GW01 (33.1 µg/L and 151 µg/L, respectively). Concentration distribution and screening value exceedances are shown on **Figure 5-12**.

5.4.4 Dissolved Inorganics

Of the 23 dissolved inorganics analyzed, 12 were detected. Aluminum, antimony, beryllium, cadmium, cobalt, mercury, selenium, silver, thallium, vanadium, and zinc were not detected in any of the dissolved samples. The only chemical detected at a concentration exceeding a corresponding MCL or RSL was arsenic (**Figure 5-12**). Arsenic was detected in only one sample, YSA14-GW02, at a concentration of 4.9 J µg/L, which is greater than the RSL (0.045 µg/L), but less than the MCL (10 µg/L).

5.4.5 Geochemical Results

Geochemical samples were collected from two wells at Site 23, YS14A-GW05 and YS14A-GW05A. Geochemical parameters are useful in determining the potential for implementation of various groundwater remedies including in situ chemical and biological treatments and monitored natural attenuation. Geochemical results for Site 14 are included in **Table 5-5**. Alkalinity results ranged from 200 mg/L to 300 mg/L. Alkalinity is a measure of the buffering capacity of an aquifer. These results indicate relatively high buffering capacity, and limited potential for changing the aquifer pH. Organic carbon was not detected in either of the well samples, indicating a low biological population and little organic matter in the aquifer at the site. Chloride concentrations in samples from YS14A-GW05 and YSA14-GW05A were 30 mg/L and 8 mg/L, respectively. Chloride is useful in determining degradation rates of some substances over time, particularly chlorinated solvents. This is the first round of chloride data collected at this site and thus, these results serve as baseline data. Nitrate was detected in the shallow well of the GW05 well pair at a concentration of 0.2 mg/L. Nitrite was not detected in any of the samples. Nitrate and nitrite are used to determine the oxidizing/reducing potential of the aquifer. At Site 34, nitrogen was found in its oxidized state (nitrate), and but not in its reduced state (nitrite). Consequently, it can be concluded that the aquifer is capable of the oxidation of nitrite. However, the overall nitrate/nitrite content of this aquifer is low. Sulfate was detected in the two samples at concentrations of 12mg/L to 16 mg/L. Sulfide was detected in the deep sample only at a concentration of 1 mg/L. Sulfate and sulfide are also used to determine the oxidizing/reducing potential of the aquifer. At Site 34, sulfur compounds were primarily in their oxidized state (sulfate); however, some sulfide was detected in the deeper well, indicating that conditions are reducing enough in the deeper portion of the aquifer to facilitate some reduction of sulfate to sulfide. Methane was detected in the shallow well at a concentration of 4.7×10^{-4} mg/L. This indicates that conditions are reducing enough for methanogenesis. Neither ethane nor ethene was detected in either of the wells sampled. Ethane and ethene are degradation products of chlorinated ethanes and ethenes. Because there were significant levels of chlorinated solvent found at the site, it appears that the rate of degradation in the groundwater for these chemicals is very slow. Based on geochemical conditions at this site, biological treatments which require reducing conditions could be implemented relatively easily, if required. Remedies requiring attainment of a specific pH (such as certain chemical oxidation treatments) may be complicated by the high buffering capacity of the aquifer.

5.4.6 Microbial Results

Samples were collected from YSA14-GW05 and YSA14-GW05A for analysis of *Dehalococcoides species* to determine the potential for degradation of chlorinated ethenes at the site. Laboratory analytical reports for the microbial testing are included in **Appendix E**. Results are summarized in **Table 5-5.** Concentrations of *Dehalococcoides* in these wells were 4.98×10^{-1} cells/mL and 5.07×10^{-1} cells/mL, respectively, and indicate that site conditions may allow for some reductive dechlorination of VOCs.

Table 5-1
Site 34 Well Construction Details
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Monitoring Well ID	Date Installed	Top of Casing Elevation (ft above msl)	Ground Surface Elevation (ft above msl)	Boring Depth (ft bgs)	Well Depth (ft bgs)	Outer Steel Casing (ft bgs)	PVC Riser (ft bgs)	Screen Interval Depth (ft bgs)	Depth to Bentonite (ft bgs)
YSA14-GW01	1/9/97	17.57	18	24	24	N/A	9	9.0-24.0	5
YSA14-GW01A	5/20/00	18.35	17.57	80.5	60	N/A	70	70.0-80.0	78
YSA14-GW02	5/17/00	14.22	12.5	20.5	20	N/A	10	10.0-20.0	6
YSA14-GW03	5/19/00	20.05	18.1	20.5	20	N/A	10	10.0-20.0	6
YSA14-GW04A	5/18/00	43.6	41.2	100.5	100	N/A	90	90.0-100.0	88
YSA14-GW05	10/13/07	19.82	17.1	30	30	N/A	10	10.0-30.0	6
YSA14-GW05A	10/14/07	19.79	17.1	50	50.00	N/A	30	30.0-50.0	26

Table 5-2
Site 34 Field Water Quality Results
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	YSA14-GW01	YSA14-GW01A	YSA14-GW02	YSA14-GW03	YSA14-GW04A	YSA14-GW05	YSA14-GW05A
Sample ID	YSA14-GW01-1107	YSA14-GW01A-1107	YSA14-GW02-1107	YSA14-GW03-1107	YSA14-GW04A-1107	YSA14-GW05-1107	YSA14-GW05A-1107
Sample Date	11/8/07	11/7/07	11/9/07	11/9/07	11/12/07	11/8/07	11/8/07
Field Parameter							
Dissolved Oxygen (mg/L)	3.87	5.03	0.23	0.26	0.47	3.88	3.25
Chemets Dissolved Oxygen (mg/L)	1	1.0	0.8	0.6	1	1	1
Oxidation Reduction Potential (mV)	42	-57	-43	74	-167	39	-113
pH	7.04	7.44	6.89	7	7.45	7.06	7.36
Salinity (pct)	0.03	0.02	0.03	0.04	0.02	0.03	0.02
Specific Conductivity (mS/cm)	0.688	0.562	0.787	0.867	0.485	0.687	0.439
Temperature (°C)	18.6	17.5	17.5	17.5	18.7	17.3	16.6
Turbidity (NTU)	NA	3	98.2	54.6	0	NA	130

Notes:

C - Degrees centigrade
ft - Feet
gal - Gallons
gal/min - Gallons per minute
mg/L - Milligrams per liter
mS/cm - Milliseimens per centimeter
mV - Millivolts
NTU - Nephelometric turbidity unit
pct - Percent
NA - Not analyzed

Table 5-3
Site 34 Water Level Survey
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Monitoring Well ID	Date of Survey	Depth to Bottom (feet)	Depth to Water (feet)	Top of Casing Elevation (feet)	Water Level Elevation (feet)
YSA14-GW01	1/15/08	23.1	12.92	17.57	4.65
YSA14-GW01A	1/15/08	79.85	13.01	18.35	5.34
YSA14-GW02	1/15/08	19.6	8.1	14.22	6.12
YSA14-GW03	1/15/08	19.95	14.19	20.05	5.86
YSA14-GW04A	1/15/08	101.97	36.35	38.89	2.54
YSA14-GW05	1/15/08	33.02	16.42	19.82	3.40
YSA14-GW05A	1/15/08	54.1	16.45	19.79	3.34

Table 5-4
Site 34 Slug Test Results
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Site	Well ID	Test Type/ID	Hydraulic Conductivity (ft/day)	Well Average Hydraulic Conductivity (ft/day)	Site Average Hydraulic Conductivity Per Hydrologic Unit (ft/day)	Comments
SSA14	A14GW01	Rising Head #1	4.76E+00			
		Rising Head #2	4.64E+00		YE	
		Rising Head #3	4.19E+00	4.53E+00	4.53E+00	YE
	A14GW01A	Falling Head #1	1.79E-02		ECCU	
		Rising Head #1	9.57E-03	1.37E-02	1.37E-02	Assumed ECCU based on boring log
Average Hydraulic Conductivity (ft/day)						
Yorktown-Eastover Aquifer			2.51E+00			
Eastover-Calvert Confining Unit			7.14E-03			

Notes
ECCU - Eastover-Calvert Confining Unit
YCU - Yorktown Confining Unit
YE - Yorktown-Eastover Aquifer

Table 5-5
Site 34 Groundwater Analytical Results
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**MCL-Groundwater**	**RSLs Tap for GW (no Surr)**	YSA14-GW01	YSA14-GW01A		YSA14-GW02	YSA14-GW03	YSA14-GW04	YSA14-GW05	YSA14-GW05A
Sample ID			YSA14-GW01-1107	YSA14-GW01A-1107	YSA14-GW01AP-1107	YSA14-GW02-1107	YSA14-GW03-1107	YSA14-GW04-1107	YSA14-GW05-1107	YSA14-GW05A-1107
Sample Date			11/08/07	11/07/07	11/07/07	11/09/07	11/09/07	11/12/07	11/08/07	11/08/07
Chemical Name										
Volatile Organic Compounds (UG/L)										
1,1,1-Trichloroethane	200	9,100	140	10 U	10 U	10 U	2.9 J	10 U	150	10 U
1,1,2-Trichloroethane	5	0.24	1.3 J	10 U	10 U	10 U	10 U	10 U	1.6 J	10 U
1,1-Dichloroethane	--	2.4	42	10 U	10 U	10 U	10 U	10 U	47	10 U
1,1-Dichloroethene	7	340	400	10 U	10 U	10 U	12	10 U	320	14
1,2-Dichloroethane	5	0.15	2.1 J	10 U	10 U	10 U	10 U	10 U	2.5 J	10 U
2-Butanone	--	7,100	10 U	10 U	10 U	10 U	10 U	3.2 J	10 U	10 U
Tetrachloroethene	5	0.11	3.6 J	10 U	10 U	10 U	10 U	10 U	4.2 J	10 U
Toluene	1,000	2,300	10 U	10 U	10 U	10 U	10 U	1 J	10 U	10 U
Trichloroethene	5	1.7	1,400	3.9 B	4.1 B	1 J	46	10 U	1,400	64
cis-1,2-Dichloroethene	70	370	110	10 U	10 U	10 U	10 U	10 U	130	5.6 J
trans-1,2-Dichloroethene	100	110	1.7 J	10 U	10 U	10 U	10 U	10 U	1.8 J	10 U
Explosives (UG/L)										
1,3,5-Trinitrobenzene	--	1,100	0.1 U	0.098 U	0.098 U	0.1 U	0.099 U	0.08 J	0.037 J	0.097 U
2-Amino-4,6-dinitrotoluene	--	73	0.3 U	0.29 U	0.29 U	2.6	0.3 U	0.3 U	0.31 U	0.29 U
4-Amino-2,6-dinitrotoluene	--	73	0.07 J	0.15 U	0.15 U	0.81	0.15 U	0.15 U	0.16 U	0.15 U
HMX	--	1,800	8.2	0.15 U	0.15 U	59	0.48	0.15 U	0.51	0.15 U
Nitrobenzene	--	3.4	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	13	0.16 U	0.12 J
RDX	--	0.61	5.5	0.24 U	0.24 U	34	0.65	0.25 U	1.2	0.24 U
Total Metals (UG/L)										
Aluminum	--	37,000	10,200 K	162 J	200 U	1,480 K	138 K	270	1,510 K	387 K
Arsenic	10	0.045	33.1	10 U	10 U	11.3	10 U	10 U	7.7 J	3.7 J
Barium	2,000	7,300	65.7 J	200 U	200 U	35.7 J	28.9 J	20.8 J	40.7 J	29.1 J
Beryllium	4	73	0.47 J	5 UL	5 UL	5 U	5 U	5 U	0.21 J	5 U
Cadmium	5	18	0.34 J	0.68 J	0.3 J	3.6 J	5 U	5 U	5 U	5 U
Calcium	--	--	171,000	52,700	51,700	132,000	127,000	57,300	131,000	83,400
Chromium	100	--	151	150	72.5	7.6 J	1.7 J	14	36.7	122
Cobalt	--	730	5.6 J	1.8 J	50 U	50 U	50 U	50 U	50 U	1.5 J
Iron	--	26,000	23,400 K	1,130	634	3,390 K	249 K	1,030 L	3,490 K	1,400 K
Lead	15	--	8.7 J	10 U	10 U	10 U	10 U	2.7 B	10 U	10 U
Magnesium	--	--	6,500	5,370	5,220	3,530 J	3,460 J	3,630 J	3,510 J	2,420 J
Manganese	--	880	101	25.5	16.3	49.4	2.4 J	31.9	18.6	53.4
Nickel	--	730	67.3	73.4	35.4 J	3.1 J	40 U	6.9 J	17.2 J	57.7
Potassium	--	--	4,890 J	5,480	5,280	1,580 J	1,750 J	3,370 J	1,960 J	1,870 J
Sodium	--	--	11,500	55,200	53,200	8,550	23,600	23,400	12,000	6,140
Vanadium	--	260	49 J	1.5 J	1.1 J	4.1 J	50 U	50 U	8.6 J	1.7 J
Zinc	--	11,000	44.4 J	7 L	5.2 L	60.3 B	60 U	13.9 J	6.9 J	4.8 J

Table 5-5
Site 34 Groundwater Analytical Results
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**MCL-Groundwater**	**RSLs Tap for GW (no Surr)**	YSA14-GW01	YSA14-GW01A		YSA14-GW02	YSA14-GW03	YSA14-GW04	YSA14-GW05	YSA14-GW05A
Sample ID			YSA14-GW01-1107	YSA14-GW01A-1107	YSA14-GW01AP-1107	YSA14-GW02-1107	YSA14-GW03-1107	YSA14-GW04-1107	YSA14-GW05-1107	YSA14-GW05A-1107
Sample Date			11/08/07	11/07/07	11/07/07	11/09/07	11/09/07	11/12/07	11/08/07	11/08/07
Chemical Name										
Dissolved Metals (UG/L)										
Arsenic	10	0.045	10 U	10 U	10 U	4.9 J	10 U	10 U	10 U	10 U
Barium	2,000	7,300	35.4 J	200 U	200 U	32.6 J	31 J	16.6 J	35 J	26.1 J
Calcium	--	--	127,000	54,300	53,100	130,000	132,000	55,200	126,000	79,700
Chromium	100	--	0.94 L	1.8 J	0.75 L	0.39 B	0.27 B	0.37 B	0.94 J	10 U
Iron	--	26,000	27 J	143	118 L	408 B	100 U	391	27.4 B	294
Lead	15	--	10 U	2.8 J	10 U	10 U	10 U	10 U	10 U	10 U
Magnesium	--	--	3,620 J	5,430	5,260	3,350 J	3,590 J	3,530 J	3,180 J	2,270 J
Manganese	--	880	0.82 B	8.9 J	8.9 J	40.2 J	1.2 B	25.1	7.5 J	36.9 J
Nickel	--	730	1.4 J	2.5 L	2.4 L	40 U	40 U	1.5 J	5 J	40 U
Potassium	--	--	1,420 J	5,580	5,420	1,320 J	1,790 J	3,290 J	1,580 J	1,810 J
Sodium	--	--	11,300	55,600	54,000	8,650 B	24,400	22,900	12,200	5,990
Zinc	--	11,000	60 U	5.8 L	60 UL	34.5 B	60 U	6.5 J	60 U	60 U
Wet Chemistry (MG/L)										
Alkalinity	--	--	NA	NA	NA	NA	NA	NA	300	200
Chloride	--	--	NA	NA	NA	NA	NA	NA	30	8
Methane	--	--	NA	NA	NA	NA	NA	NA	1.90E-04 U	4.70E-04
Nitrate	10	58	NA	NA	NA	NA	NA	NA	0.2	0.006 U
Sulfate	--	--	NA	NA	NA	NA	NA	NA	12	16
Sulfide	--	--	NA	NA	NA	NA	NA	NA	1 U	1
Dechlorinating Bacteria (CELL/ML)										
Dehalococcoides	--	--	NA	NA	NA	NA	NA	NA	0.498	0.507

Notes:

Exceeds one or more criteria

B - Analyte not detected above the level reported in blanks

CELL/ML - Cells per Milliliter

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high, actual value may be lower

L - Analyte present, value may be biased low, actual value may be higher

MG/L - Milligrams per liter

NA - Not analyzed

U - The material was analyed for, but not detected

UG/L - Micrograms per liter

UL - Analyte not detected, quantitation limit is probably higher

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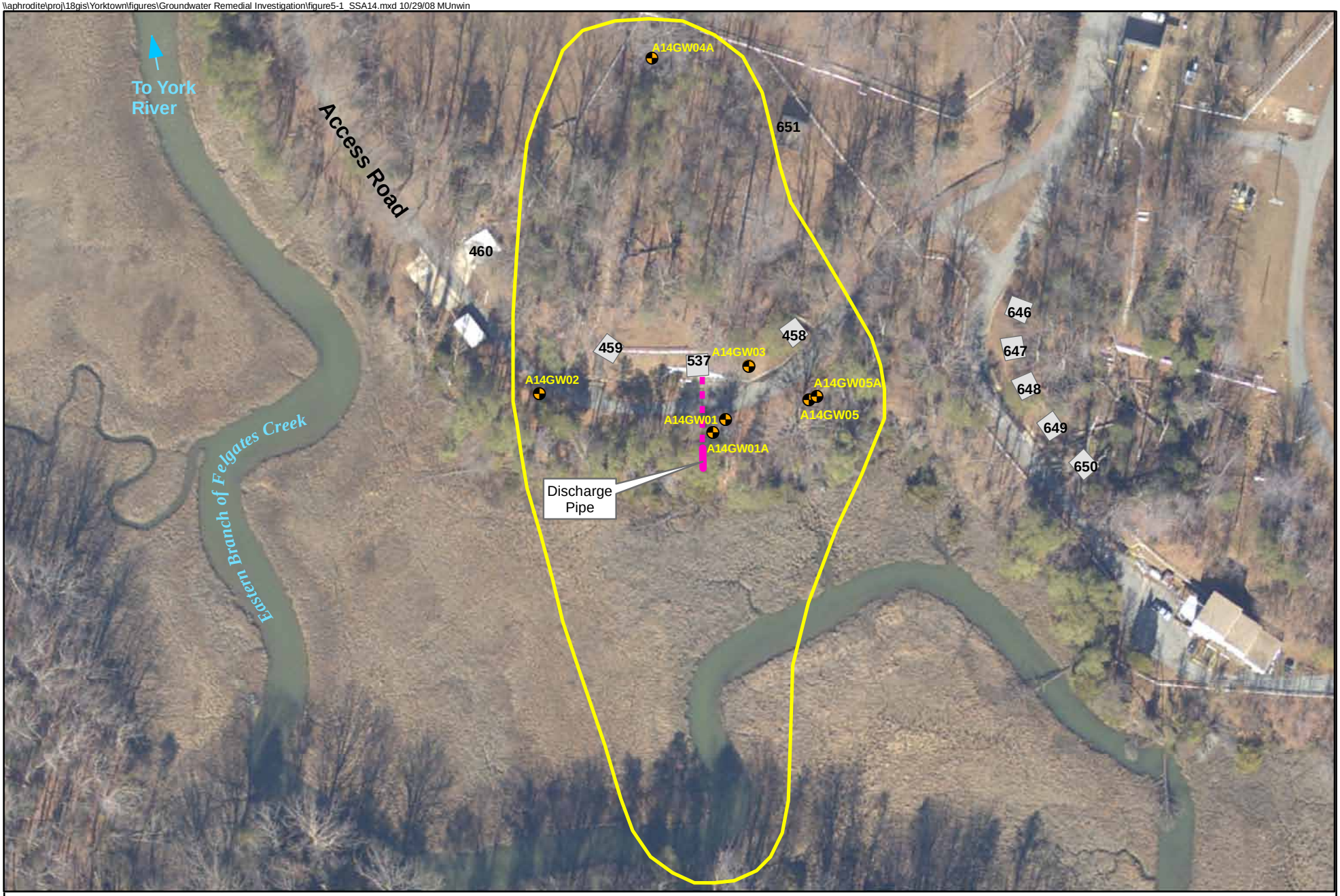


LEGEND

- Study Area Boundary*
- Approximate Location of Discharge Pipe
- Yorktown-Eastover Monitoring Wells

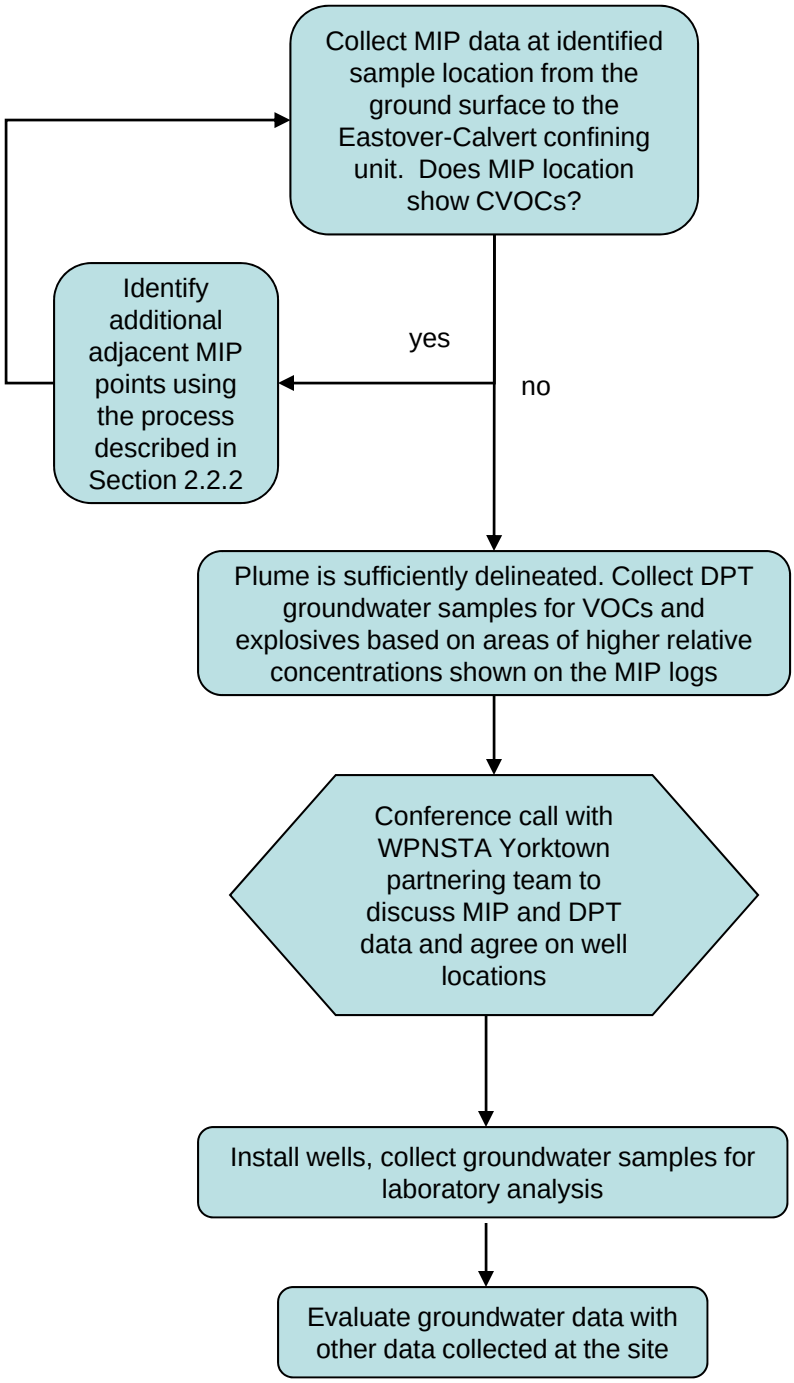
*All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

N

0 50 100 Feet

Figure 5-1
Site 34 Layout
Groundwater Remedial Investigation for Groundwater Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL



CVOCs - chlorinated volatile organic compounds
DPT - direct push technology
MIP - membrane interface probe
VOCs – volatile organic compounds
WPNSTA - Weapons Station

Figure 5-2
Site 34 MIP Decision Tree
Remedial Investigation Report for Groundwater at
Sites 8 and SSA 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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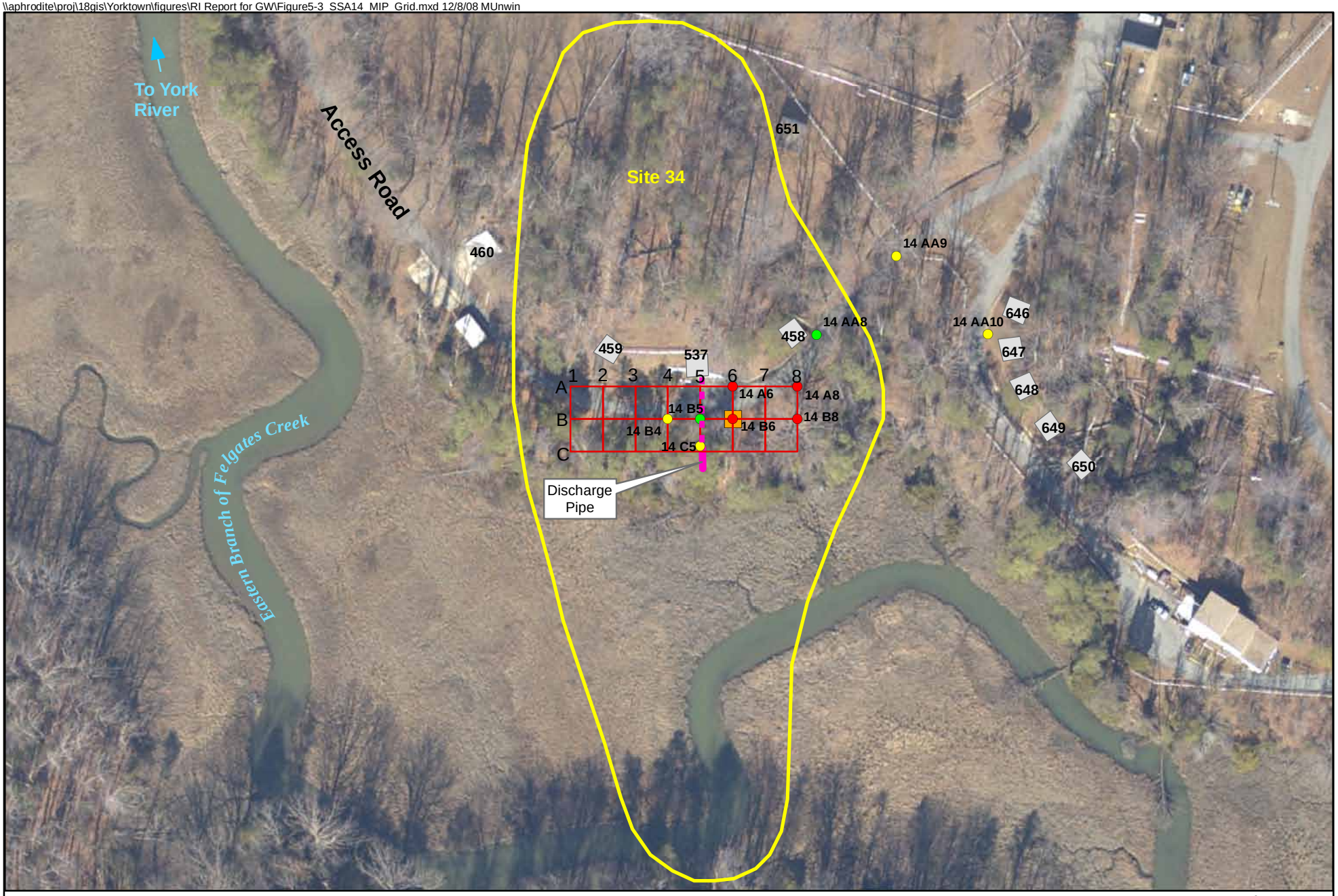

LEGEND

- MIP Location Grid
- Approximate Location of Discharge Pipe
- Study Area Boudnary
- Proposed Initial MIP Survey Start Point
- ECD Response less than 10^5 uV
- ECD Response greater than 10^5 uV and less than 10^5 uV
- ECD Response less than 10^6 uV

N

0 50 100 Feet

Figure 5-3
Site 34 MIP Grid
Remedial Investigation for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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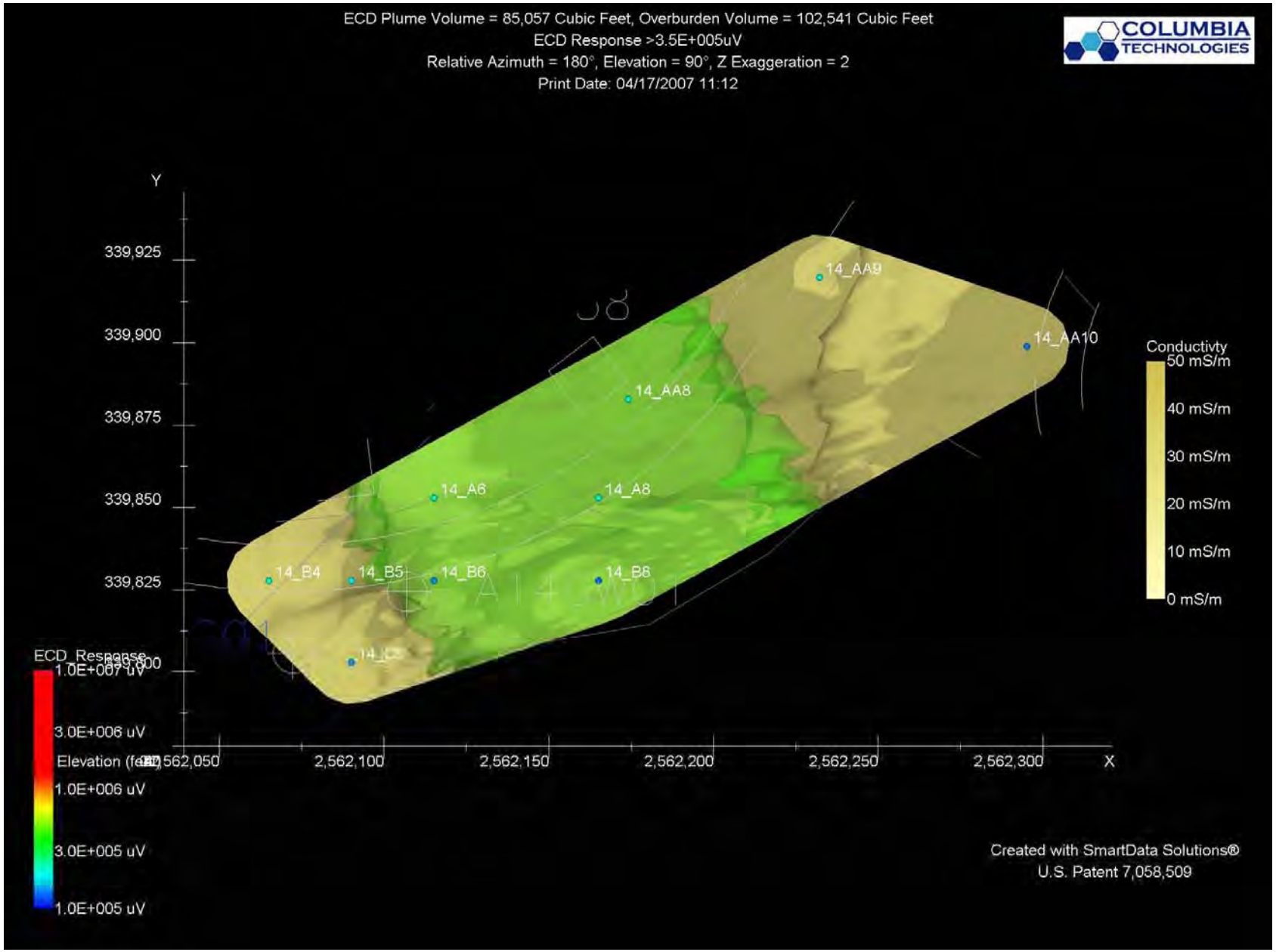

Figure 5-4
Site 34 Chlorinated VOC Plume in Plane View
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

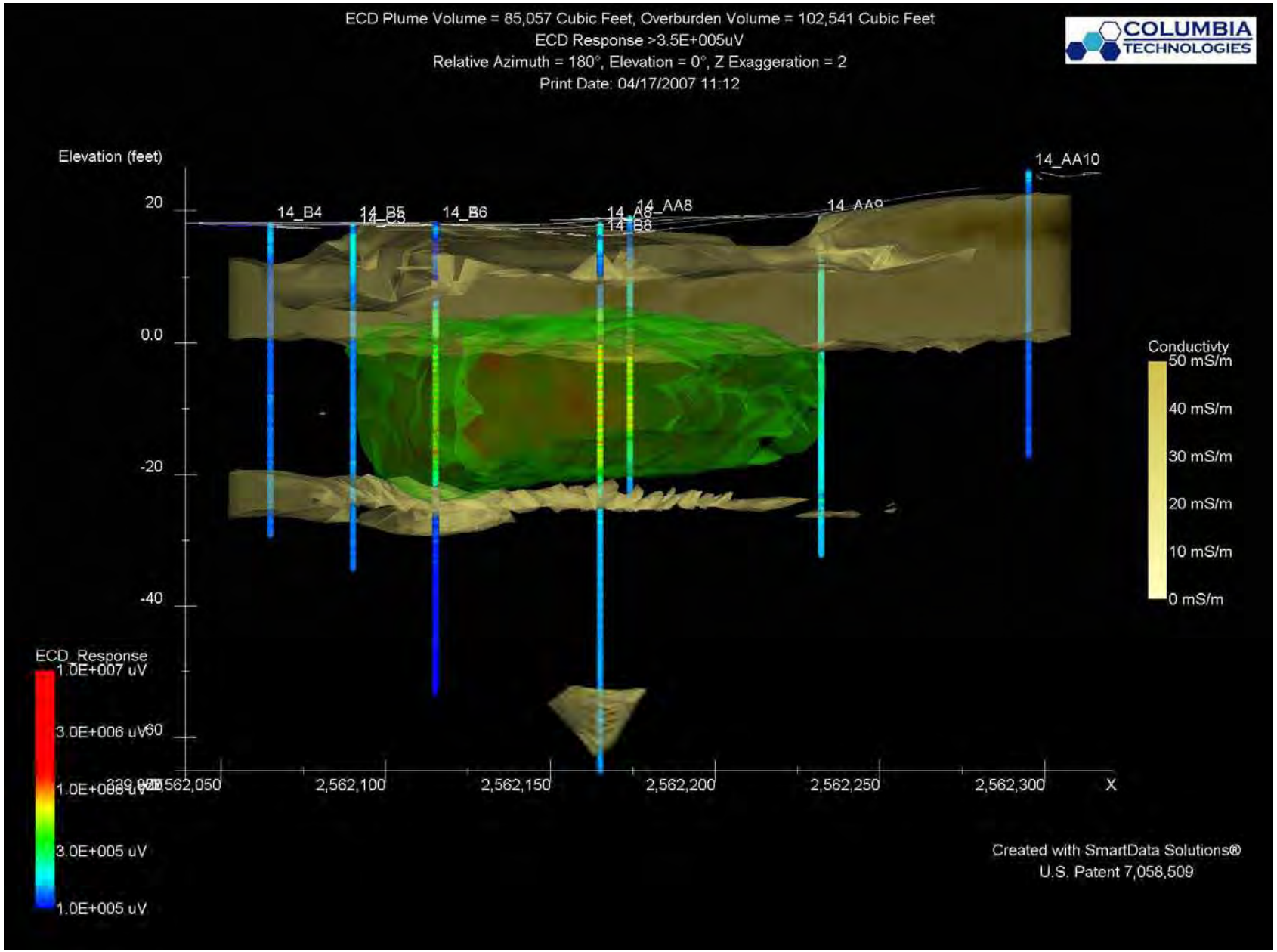

Figure 5-5
Site 34 Chlorinated VOC Plume Cross Section from West to East
Remedial Investigation Report for Groundwater Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

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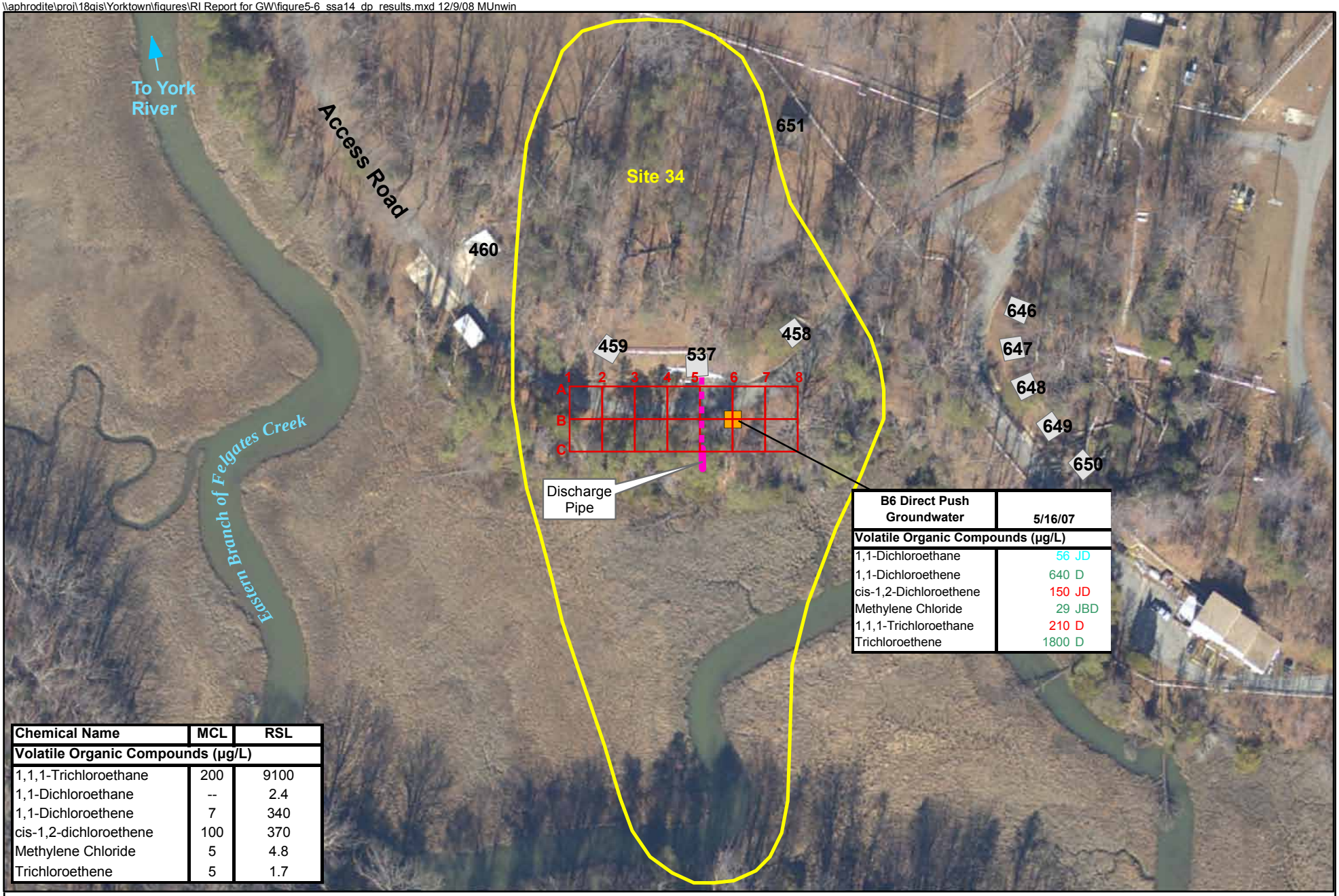

B6 Direct Push Groundwater	5/16/07
Volatile Organic Compounds (µg/L)	
1,1-Dichloroethane	56 JD
1,1-Dichloroethene	640 D
cis-1,2-Dichloroethene	150 JD
Methylene Chloride	29 JBD
1,1,1-Trichloroethane	210 D
Trichloroethene	1800 D

Chemical Name	MCL	RSL
Volatile Organic Compounds (µg/L)		
1,1,1-Trichloroethane	200	9100
1,1-Dichloroethane	--	2.4
1,1-Dichloroethene	7	340
cis-1,2-dichloroethene	100	370
Methylene Chloride	5	4.8
Trichloroethene	5	1.7

Legend

- Study Area Boundary
- Approximate Location of Discharge Pipe
- MIP Location Grid
- Proposed Initial MIP Survey Start Point

Exceeds MCL Criteria Only
Exceeds RSL Cirteria Only
Exceeds both MCL and RSL Criteria
MCL - Maximum Contaminant Level
RSL - Risk Screening Level
µg/L - micrograms per Liter
J - Value is estimated
B - Possible Blank Contamination
D - Diluted Result

N

0 50 100 Feet

Figure 5-6
Site 34 Direct Push Sampling Results
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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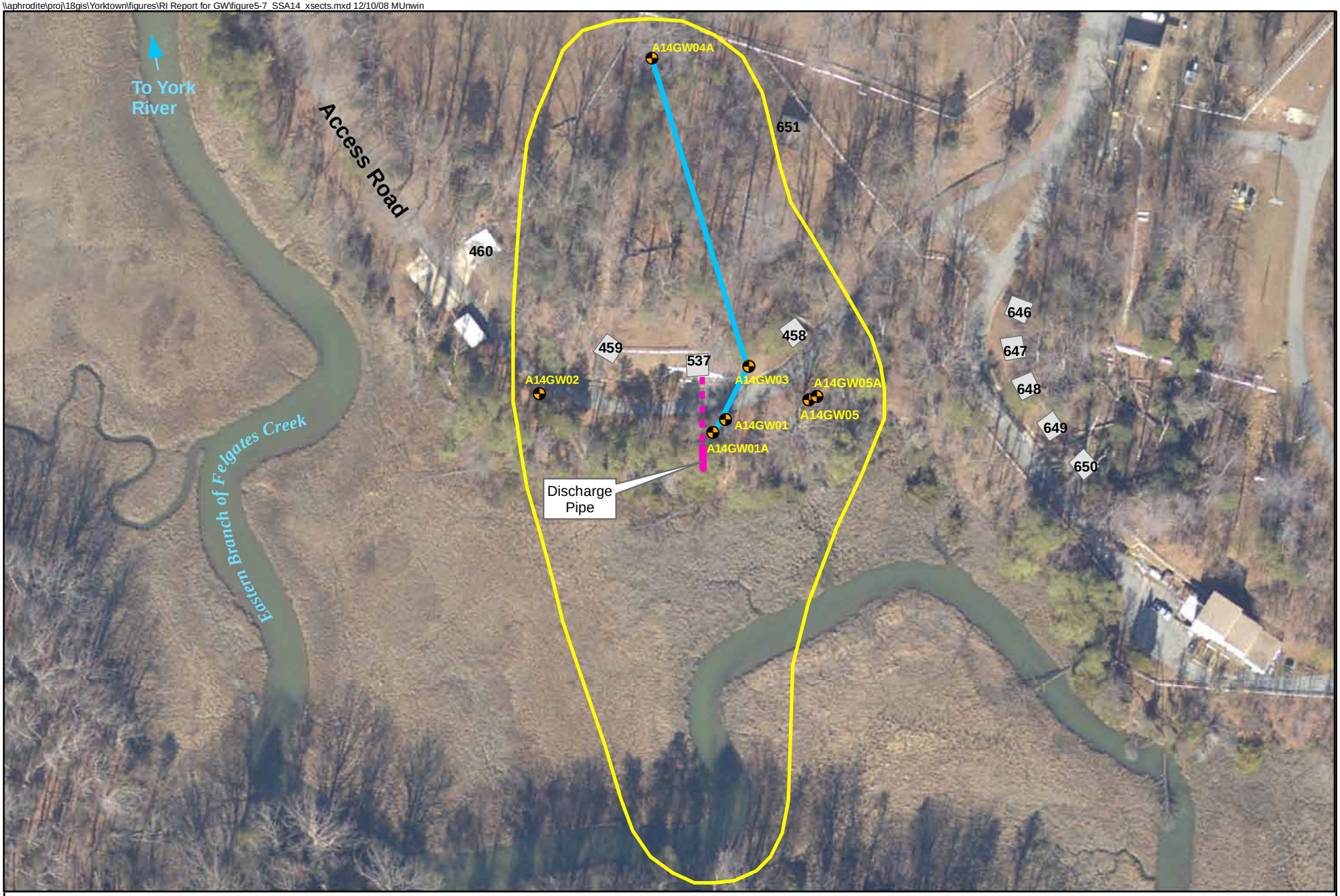

LEGEND

- Study Area Boundary*
- Approximate Location of Discharge Pipe
- Cross-section Location
- Yorktown-Eastover Monitoring Wells

*All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

N

0 50 100 Feet

Figure 5-7
Location of Geological Cross Section for Site 34
Groundwater Remedial Investigation for Groundwater Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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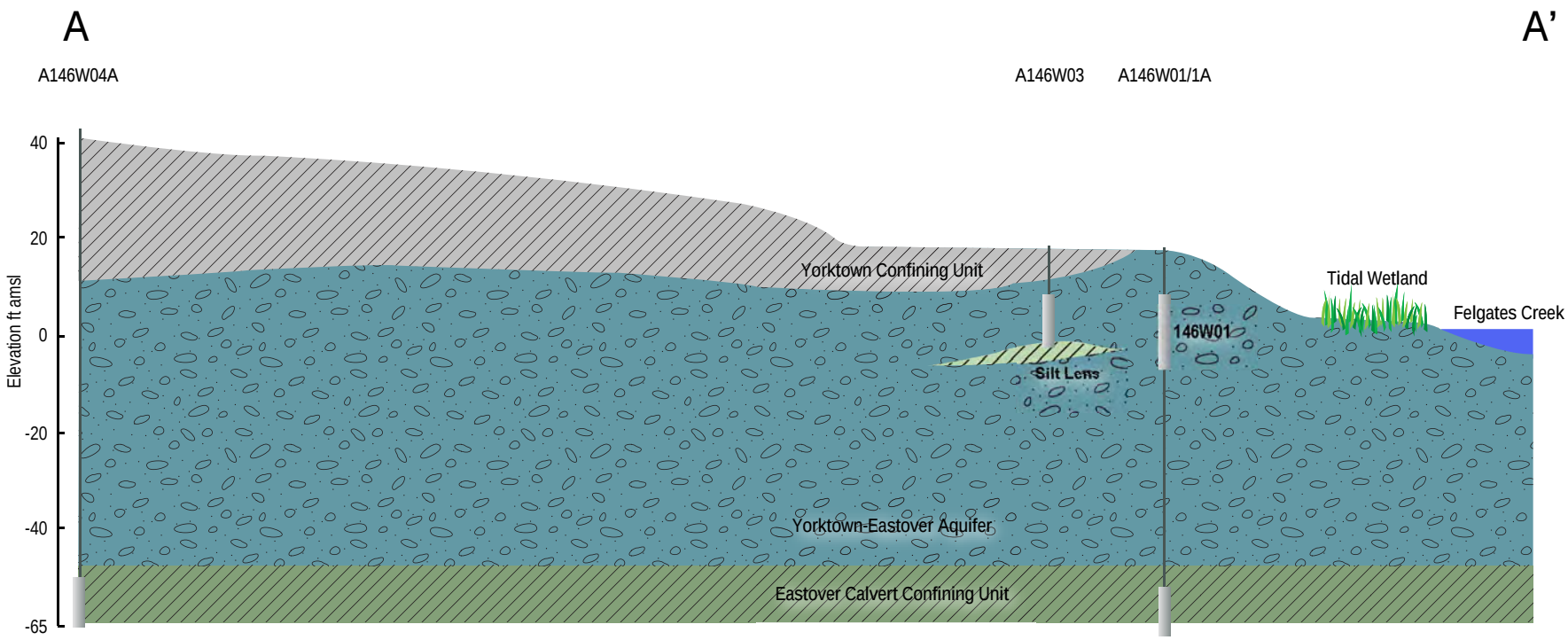

LEGEND

- Yorktown-Eastover Aquifer
- Yorktown Confining Unit
- Eastover Calvert Confining Unit
- Silt Lens

Figure 5-8
Geological Cross Section of Site 34
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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ES102008026WDC Figure5-8 v4.ai

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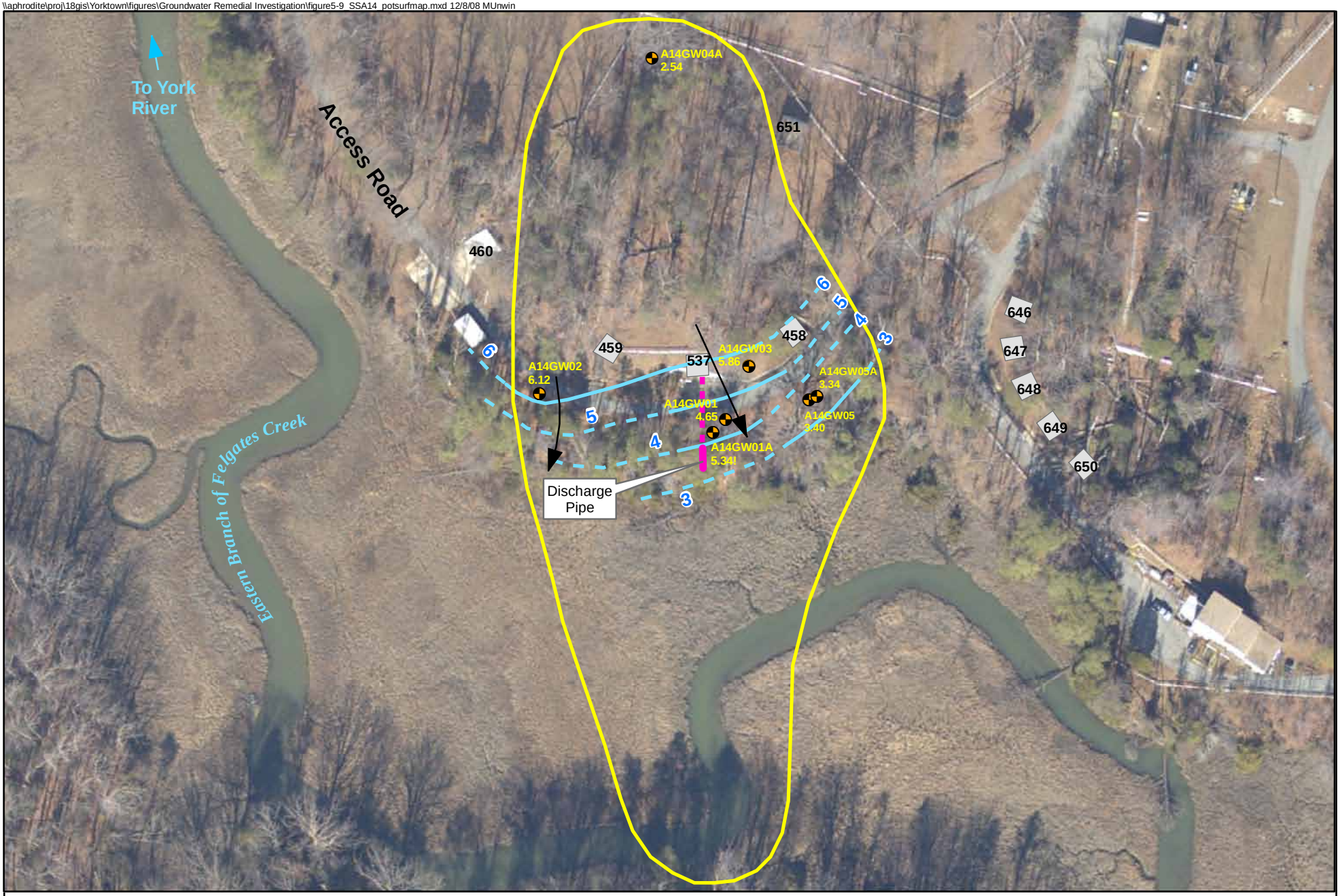

Legend

- Study Area Boundary*
- Approximate Location of Discharge Pipe
- Yorktown-Eastover Monitoring Wells
- Groundwater Contour
- Groundwater Flow Direction

*All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.
Deep aquifer elevation for well A14GW04A not used in contour

N

0 50 100 Feet

Figure 5-9
Site 34 Potentiometric Surface Map
Remedial Investigation for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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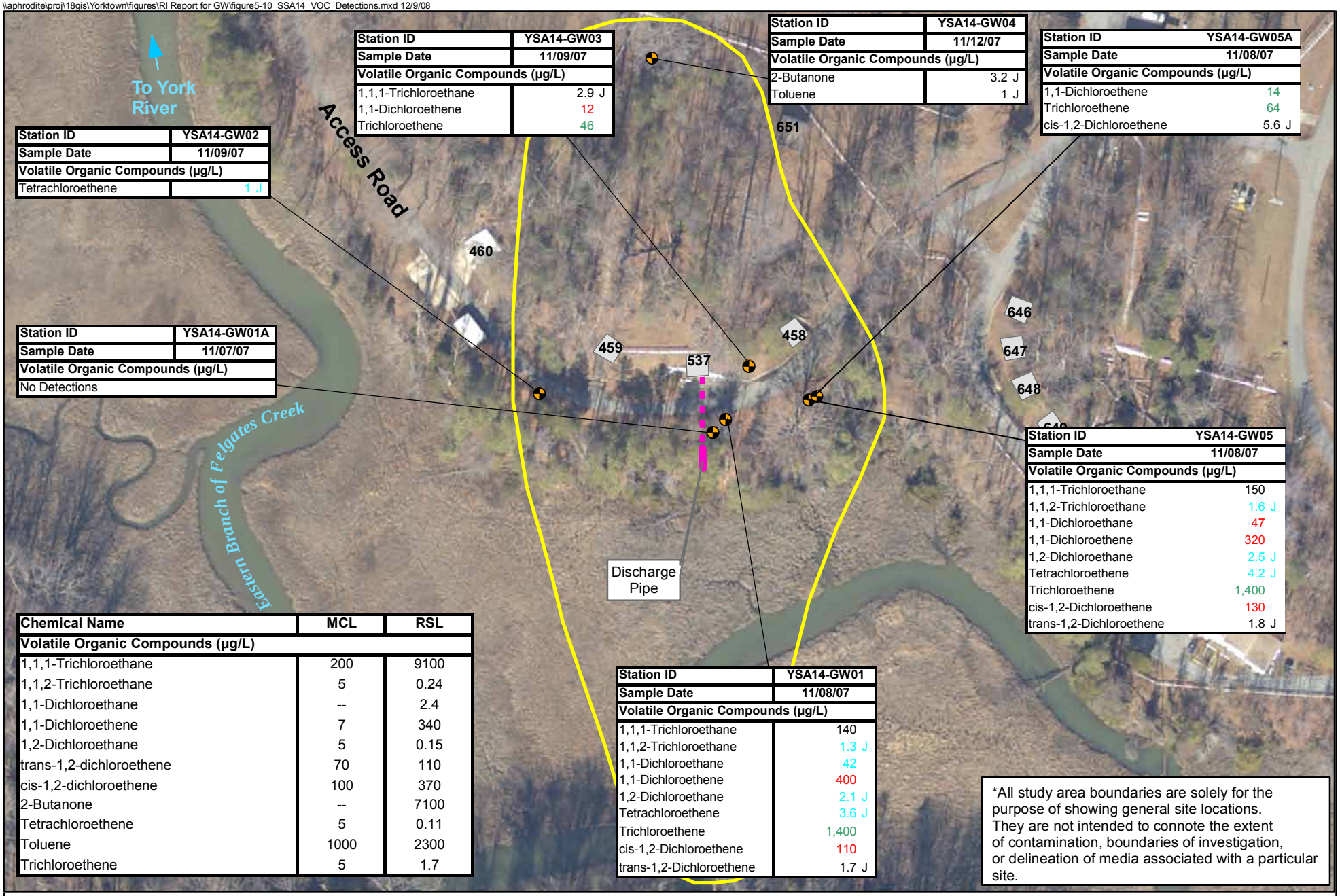

Station ID	YSA14-GW03
Sample Date	11/09/07
Volatile Organic Compounds (µg/L)	
1,1,1-Trichloroethane	2.9 J
1,1-Dichloroethene	12
Trichloroethene	46

Station ID	YSA14-GW04
Sample Date	11/12/07
Volatile Organic Compounds (µg/L)	
2-Butanone	3.2 J
Toluene	1 J

Station ID	YSA14-GW05A
Sample Date	11/08/07
Volatile Organic Compounds (µg/L)	
1,1-Dichloroethene	14
Trichloroethene	64
cis-1,2-Dichloroethene	5.6 J

Station ID	YSA14-GW02
Sample Date	11/09/07
Volatile Organic Compounds (µg/L)	
Tetrachloroethene	1 J

Station ID	YSA14-GW01A
Sample Date	11/07/07
Volatile Organic Compounds (µg/L)	
No Detections	

Station ID	YSA14-GW05
Sample Date	11/08/07
Volatile Organic Compounds (µg/L)	
1,1,1-Trichloroethane	150
1,1,2-Trichloroethane	1.6 J
1,1-Dichloroethane	47
1,1-Dichloroethene	320
1,2-Dichloroethane	2.5 J
Tetrachloroethene	4.2 J
Trichloroethene	1,400
cis-1,2-Dichloroethene	130
trans-1,2-Dichloroethene	1.8 J

Station ID	YSA14-GW01
Sample Date	11/08/07
Volatile Organic Compounds (µg/L)	
1,1,1-Trichloroethane	140
1,1,2-Trichloroethane	1.3 J
1,1-Dichloroethane	42
1,1-Dichloroethene	400
1,2-Dichloroethane	2.1 J
Tetrachloroethene	3.6 J
Trichloroethene	1,400
cis-1,2-Dichloroethene	110
trans-1,2-Dichloroethene	1.7 J

Chemical Name	MCL	RSL
Volatile Organic Compounds (µg/L)		
1,1,1-Trichloroethane	200	9100
1,1,2-Trichloroethane	5	0.24
1,1-Dichloroethane	--	2.4
1,1-Dichloroethene	7	340
1,2-Dichloroethane	5	0.15
trans-1,2-dichloroethene	70	110
cis-1,2-dichloroethene	100	370
2-Butanone	--	7100
Tetrachloroethene	5	0.11
Toluene	1000	2300
Trichloroethene	5	1.7

*All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

LEGEND

- Study Area Boundary*
- Approximate Location of Discharge Pipe
- Yorktown-Eastover Monitoring Wells

Exceeds MCL Criteria Only
Exceeds RSL Criteria Only
Exceeds both MCL and RSL Criteria

RSL - Risk Screening Level
MCL - Maximum Contaminant Level
µg/L - micrograms per Liter
J - Value is estimated

N

0 50 100 Feet

Figure 5-10
Site 34 VOC Detections
Groundwater Remedial Investigation for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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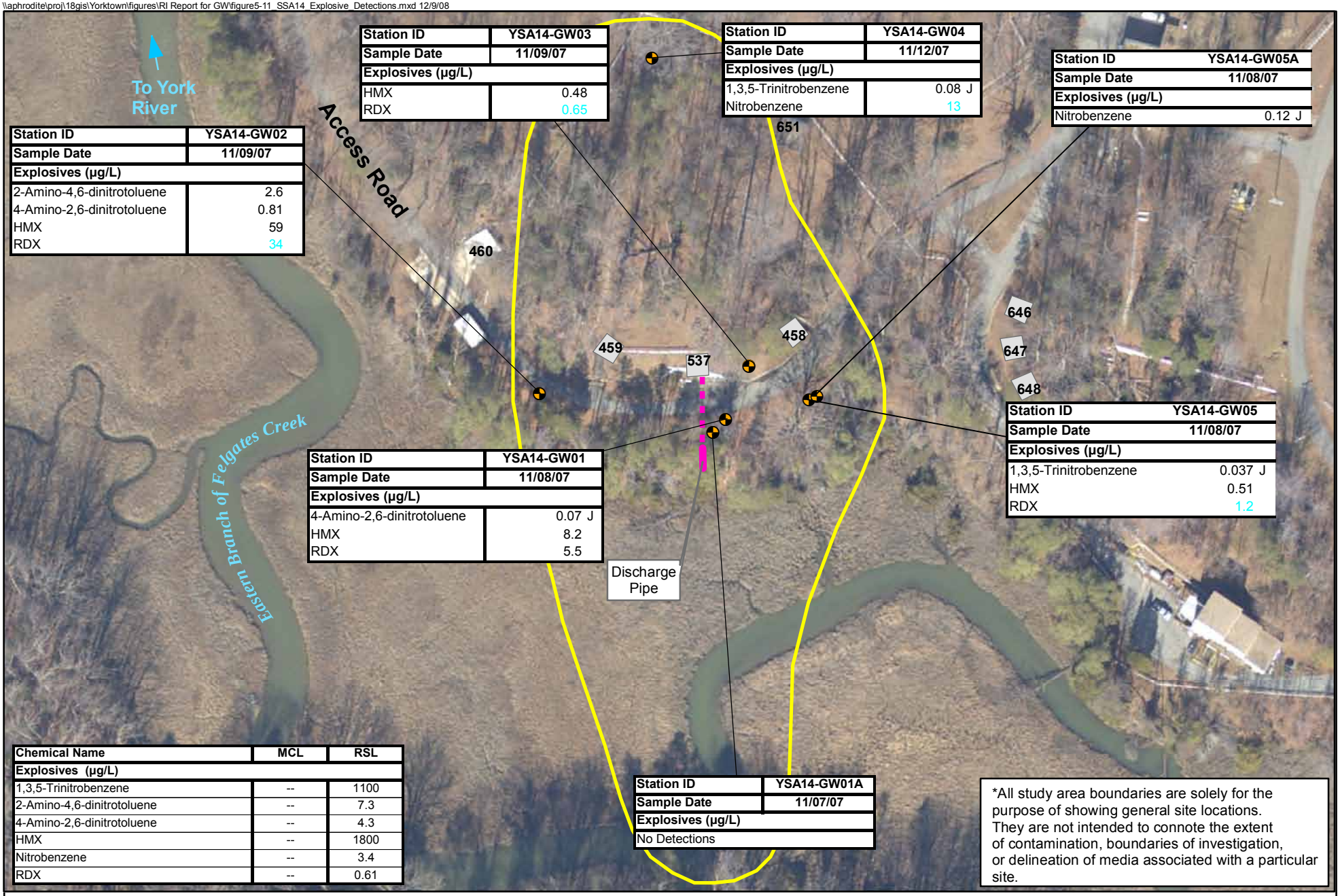

Station ID	YSA14-GW03
Sample Date	11/09/07
Explosives (µg/L)	
HMX	0.48
RDX	0.65

Station ID	YSA14-GW04
Sample Date	11/12/07
Explosives (µg/L)	
1,3,5-Trinitrobenzene	0.08 J
Nitrobenzene	13

Station ID	YSA14-GW05A
Sample Date	11/08/07
Explosives (µg/L)	
Nitrobenzene	0.12 J

Station ID	YSA14-GW02
Sample Date	11/09/07
Explosives (µg/L)	
2-Amino-4,6-dinitrotoluene	2.6
4-Amino-2,6-dinitrotoluene	0.81
HMX	59
RDX	34

Station ID	YSA14-GW05
Sample Date	11/08/07
Explosives (µg/L)	
1,3,5-Trinitrobenzene	0.037 J
HMX	0.51
RDX	1.2

Station ID	YSA14-GW01
Sample Date	11/08/07
Explosives (µg/L)	
4-Amino-2,6-dinitrotoluene	0.07 J
HMX	8.2
RDX	5.5

Station ID	YSA14-GW01A
Sample Date	11/07/07
Explosives (µg/L)	
No Detections	

Chemical Name	MCL	RSL
Explosives (µg/L)		
1,3,5-Trinitrobenzene	--	1100
2-Amino-4,6-dinitrotoluene	--	7.3
4-Amino-2,6-dinitrotoluene	--	4.3
HMX	--	1800
Nitrobenzene	--	3.4
RDX	--	0.61

*All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

LEGEND

- Study Area Boundary*
- Approximate Location of Discharge Pipe
- Yorktown-Eastover Monitoring Wells

Exceeds MCL Criteria Only
Exceeds RSL Criteria Only
Exceeds both MCL and RSL Criteria

RSL - Risk Screening Level
MCL - Maximum Contaminant Level
µg/L - micrograms per Liter
HMX - 1,3,5,7-tetranitro-1,3,5,7-tetrazocane
RDX - 1,3,5-Trinitroperhydro-1,3,5-triazine
J - Value is estimated

N

0 50 100 Feet

Figure 5-11
Site 34 Explosive Detections
Groundwater Remedial Investigation for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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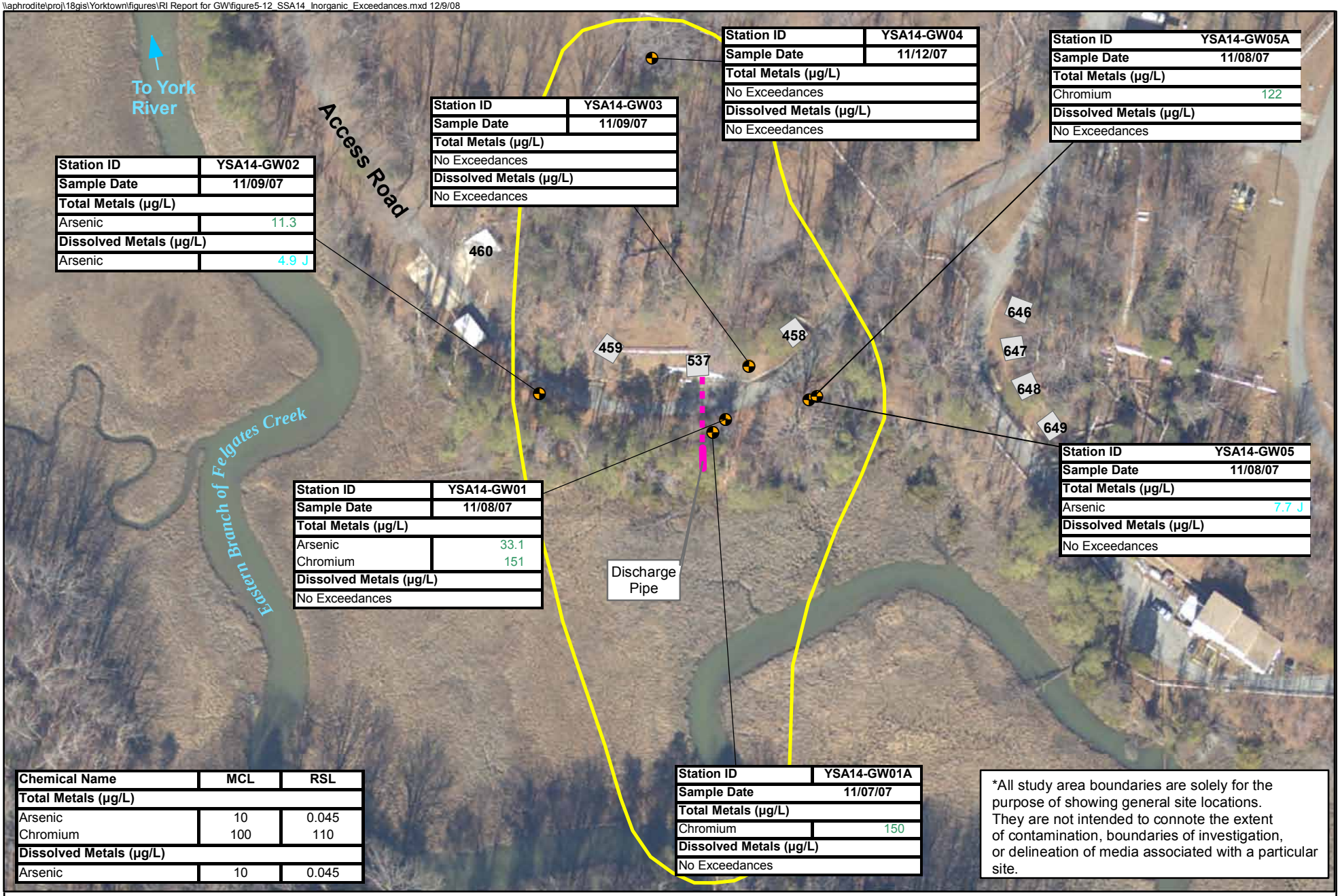

Chemical Name	MCL	RSL
Total Metals (µg/L)		
Arsenic	10	0.045
Chromium	100	110
Dissolved Metals (µg/L)		
Arsenic	10	0.045

*All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

LEGEND

- Study Area Boundary*
- Approximate Location of Discharge Pipe
- Yorktown-Eastover Monitoring Wells

Exceeds MCL Criteria Only
Exceeds RSL Criteria Only
Exceeds both MCL and RSL Criteria

RSL - Risk Screening Level
MCL - Maximum Contaminant Level
µg/L - micrograms per Liter
J - Value is estimatedJ - Value is estimated

N

0 50 100 Feet

Figure 5-12
Site 34 Inorganic Exceedances
Groundwater Remedial Investigation for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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SECTION 6

Surface Water and Sediment Investigation Results

This section summarizes the results of the surface water and sediment sampling efforts completed as part of the Groundwater RI field efforts. Sampling methodology is described in Section 3.7. Samples locations are shown on **Figure 6-1**. All samples were collected in the Eastern Branch of Felgates Creek and the marsh adjacent to Sites 8 and 34. The Eastern Branch of Felgates Creek is a tidal water body that feeds into the Main Branch of Felgates Creek which feeds into the York River. Because samples were collected from the same surface water body, sample results for both sites are discussed together.

6.1 Surface Water Analytical Results

This section summarizes surface water analytical results, field parameters, and geochemical results. Organic detections are shown on **Figure 6-2**. Inorganic detections exceeding ecological or human health screening values are shown on **Figure 6-3**. Detections are included in **Tables 6-1 through 6-3**.

6.1.1 VOCs

Four VOCs were detected in surface water: TCE, 1,1-DCE, cis-1,2-DCE and 1,1,1-TCA. Highest concentrations of these chemicals were 43 µg/L, 15 µg/L, 6.8 J µg/L and 2.3 J µg/L, respectively. The detected concentrations of TCE exceeded the human health risk screening value (tap water RSL×10) of 0.26 J µg/L. VOCs were detected in the surface water samples located closest to Site 34 (YSA14-SW04 and its duplicate). There were no VOCs detected in surface water samples near Site 8 or in upstream reference samples.

6.1.2 SVOCs

There were no detections of SVOCs in any of the surface water samples collected as part of this investigation.

6.1.3 Pesticides and PCBs

There were no pesticides/PCBs detected in surface water during the RI field investigations.

6.1.4 Explosives

There were four explosives detected in surface water during this field investigation: 2-amino-4,6-DNT, octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX), RDX, and nitrobenzene. HMX and RDX were detected in samples associated with both Sites 8 and 34. The only sample associated with Site 8 in which these chemicals was detected was YS08-SW04, which was the sample located furthest downstream of the site in the Eastern Branch of Felgates Creek. Concentrations of HMX and RDX in this sample were 0.21 J µg/L and 0.041 J µg/L, respectively. HMX and RDX were also detected in the two surface water samples closest to Site 34, YSA14-SW04 and YSA14-SW08. Maximum concentrations in these

samples for HMX and RDX were 1.1 µg/L and 4.9 K µg/L, respectively. 2-amino-4,6-DNT was detected in the sample from location YSA14-SW06 at a concentration of 0.22 J µg/L. Nitrobenzene was detected in the sample from YSA14-SW02 at a concentration of 0.05 J µg/L. There were no human health or ecological screening value exceedances for explosives in surface water associated with Sites 8 and 34.

6.1.5 Total Inorganics

Of the 24 TAL inorganics analyzed, 18 were detected. Antimony, cobalt, cyanide, lead, thallium and zinc were not detected in any samples. Concentrations of total inorganics exceeding human health and ecological screening values are shown on **Figure 6-3**.

Aluminum was detected in all but one of the surface water samples at concentrations ranging from 276 µg/L to 2,520 µg/L. These concentrations of aluminum exceeded the ecological screening value (87µg/L), but not the human health screening value (37,000 µg/L) for this chemical. Concentrations of aluminum were generally comparable in the area surrounding the sites than they were in the upstream reference area where the range of concentrations was 411 µg/L to 1,480 µg/L. The maximum concentration of aluminum in surface water (2,520 K µg/L) was detected in the sample from YSA14-SW04, closest to Site 34. Aluminum was detected in groundwater at Site 34 at a maximum concentration of 10,200 K µg/L. Therefore, the elevated concentrations of aluminum in the sample from YSA14-SW04 could be related to Site 34.

Total arsenic concentrations ranged from not detected to 7.9 J µg/L (YSA14-SW04). Arsenic was detected in one sample each from Site 8, Site 34, and the upstream reference samples. Concentrations exceeded the human health screening value (0.45 µg/L) at all locations where arsenic was detected (**Figure 6-3**). However, concentrations were greatest at the sample location immediately adjacent to Site 34. Arsenic concentrations were generally consistent with concentrations in groundwater.

Total barium was detected at concentrations of up to 42.8 J µg/L (YSA14-SW04). All total barium concentrations exceeded the ecological risk screening value of 4 µg/L, but were below the human health value of 7,300 µg/L. Concentrations of barium in surface water were generally consistent with groundwater values. Upstream and downstream concentrations were also comparable with the exception of the result for YSA14-SW04, which was higher than all of the upstream reference concentrations (max conc. = 35.9 µg/L).

Iron was detected at concentrations up to 2,880 K µg/L (YSA14-SW04), exceeding the ecological screening value (1000 µg/L), but below the human health screening value (26,000 µg/L). This samples was the only sample at Site 34 that exceeded a screening value and upgradient reference concentrations. All detections in the vicinity of Site 8 were less than all corresponding screening values.

Total silver was detected in surface water in one sample YSA14-SW05 at a concentration of 1.2 J µg/L, slightly exceeding the ecological screening value of 0.23 µg/L.

Overall, total metals concentrations in surface water appear to be elevated in the immediate vicinity of Site 34, but not in the vicinity of Site 8.

6.1.6 Dissolved Inorganics

Of the 23 inorganics analyzed, 12 were detected. Antimony, beryllium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, and vanadium were not detected in any of the dissolved samples. Concentrations of dissolved inorganics (with the exception of essential human nutrients) detected in samples associated with Sites 8 and 34 exceeding screening values are shown on **Figure 6-3** and discussed below.

Aluminum was detected in Sites 8 and 34 surface water at concentrations of up to 317 µg/L (YSA14-SW01), exceeding the ecological screening value of 87 µg/L. However, aluminum concentrations were substantially lower in the dissolved samples than they were in the total metals samples, and concentrations were comparable to or less than the upstream reference locations. Therefore, aluminum in surface water does not appear to be related to any of the sites.

Arsenic was detected at concentrations up to 5.9 J µg/L, in exceedance of the human health risk screening value of 0.45 µg/L. Concentrations of arsenic in surface water were generally consistent with groundwater concentrations in upgradient wells, and there therefore, unlikely to be site-related.

Barium was detected at concentrations up to 38 J µg/L in filtered surface water, in exceedance of the ecological screening value of 4 µg/L. Concentrations were comparable to upstream reference samples and are unlikely to be site-related.

Although iron and silver were detected in total metals samples at concentrations exceeding risk values, there were no exceedances of these metals in dissolved samples. Overall, inorganic contributions from the sites to surface water appear to be minimal.

6.1.7 Field Parameter Results

Field parameters were collected for the surface water samples using a Horiba U-22 water quality meter. Results are included in **Table 6-4**. Surface water pH was generally neutral, ranging between 6 and 8.5 with higher pHs in the vicinity of Site 8 and lower pHs in the vicinity of Site 34. DO results generally indicated very oxidizing conditions in surface water (up to 12.8 mg/L). Salinity results were generally consistent with fresh to brackish water (4 percent or less). Results were higher than groundwater salinity results (up to 0.05 percent) due to the tidal influx of brackish water. Specific conductivity values were generally higher than groundwater, ranging from 0.1 mS/cm to 94.5 mS/cm. Results were generally around 30 mS/cm, consistent with water with a slightly elevated ionic potential.

6.1.8 Geochemical Results

Alkalinity samples were collected at all surface water locations. Alkalinity results ranged from 130 mg/L to 190 mg/L in surface water locations in the vicinity of Sites 8 and 34 indicating moderate to high buffering capacity of surface water.

6.1.9 Summary of Surface Water Results

Overall, surface water associated with Sites 8 and 34 does not appear to be significantly impacted by site operations. The area that appears to be most influenced by site locations is immediately adjacent to Site 34. However, it is important to note that the sample locations at which concentrations were highest (YSA14-SW04 and YSA14-SW06) were immediately

adjacent to the removal action area which was under construction at the time of sampling. Consequently, these samples are believed to have been disturbed, and were thus, not included in the risk assessment.

6.2 Sediment Analytical Results

This section summarizes sediment analytical results. Organic detections are shown on **Figure 6-4**. Inorganic detections exceeding ecological or human health screening values are shown on **Figure 6-5**. Detections are included in **Tables 6-5** through **6-7**.

6.2.1 VOCs

Acetone, carbon disulfide, and xylenes were the only VOCs detected in sediment. Maximum concentrations of these chemicals in sediment associated with Sites 8 and 34 were 31 micrograms per kilogram (µg/kg), 15 J µg/kg, and 15 J µg/L, respectively. Detected concentrations of carbon disulfide exceeded the ecological screening value of 0.85 µg/kg. Acetone is a common lab contaminant and carbon disulfide is a naturally occurring substance that is commonly found in marsh sediments. These chemicals were also detected in a sample from one upstream reference location at concentrations of 39 µg/kg and 13 J µg/kg, respectively. Consequently, these chemicals are not believed to be site-related. Xylenes were detected in only one sample (YSA14-SD02) at a concentration below corresponding screening values.

6.2.2 SVOCs

There were no detections of SVOCs in surface water samples collected as part of the RI.

6.2.3 Pesticides and PCBs

There were no pesticides or PCBs detected in sediment samples collected in support of the RI.

6.2.4 Explosives

There were no explosives detected in sediment samples collected in support of this RI.

6.2.5 Inorganics

Of the 24 TAL inorganics analyzed, 20 were detected. Antimony, cyanide, thallium, and selenium were not detected in any samples. Concentrations of aluminum, arsenic, manganese, mercury, and silver exceeded ecological and/or human health screening values in one or more samples. Most detections of aluminum at both sites exceeded the ecological screening value of 18,000 µg/L. The maximum concentration of this inorganic was 26,500 µg/kg (YS08-SD04). However concentrations were comparable to the upstream reference samples (maximum concentration = 20,900 J µg/kg) and are unlikely to be site-related. There were no detections of aluminum in sediment in exceedance of the human health risk screening value of 77,000 µg/kg. Concentrations of arsenic in sediment in the vicinity of the sites ranged from not detected to 13.4 µg/kg, in exceedance of the human health and ecological screening values of 3.9 µg/kg and 8.2 µg/kg, respectively. Concentrations of arsenic in the upstream reference locations were similar to site samples, ranging from 7.1 µg/kg to 14.8 µg/kg. Therefore, arsenic is unlikely to be site-related. Concentrations of manganese at the sites ranged from 100 J µg/kg to 412 µg/kg, which

some detections in exceedance of the ecological screening value of 260 µg/kg. All concentrations were less than the human health screening value of 1,800 µg/kg. Additionally, concentrations were similar to the upstream reference sample concentrations which ranged from 104 J µg/kg to 496 K µg/kg, and therefore are unlikely to be site-related. Mercury was detected in two samples adjacent to Site 34 at concentrations greater than the ecological screening value of 0.15 µg/kg, but less than the human health screening value of 23 µg/kg. Mercury was detected in YSA14-SD03 and YSA14-SD04 at concentrations of 0.16 J µg/kg and 1.2 µg/kg, respectively. Silver was detected in two sediment samples associated with Site 34 at concentrations greater than the ecological screening value (1 µg/kg), but less than the human health screening value of 390 µg/kg. Silver was detected in samples from YSA14-SD01 and YSA14-SD04 at a concentration of 1.2 J µg/kg. This concentration was less than the upstream reference sample concentrations and therefore, silver is unlikely to be site related. Concentrations of inorganics are shown on **Figure 6-5**.

Analytical results for Sites 8 and 34 sediment generally indicate minimal impacts from the sites. Low levels of mercury in sediment at Site 34 may be site-related. Mercury was a soil COC at Site 34, however, no mercury was detected in groundwater. A soil-based PRG was established for mercury and was met in post-removal confirmation samples following the removal of site soils. However, mercury was not a sediment COC at Site 34 so a sediment-based PRG was not developed and mercury was not included in the post-removal confirmation samples collected from the wetland area. Two sediment samples (YSA14-SD04 and YSA14-SD06) were collected in the wetland area immediately adjacent to the excavation area as part of this RI at the same time the removal action sub-contractor was still mobilized. Pre-confirmation samples in this area of the wetland did not contain detectable mercury (Baker, 2005a). Sediment in the area was excavated to meet established clean-up goals for other chemicals. SD04 exceeded ecological sediment screening values for mercury. SD06, which is directly downgradient of SD04 and near where the wetland transitions into the creek, did not exceed sediment screening values for mercury. This suggests that any mercury contamination that any remain in this area is localized and is not reaching the creek at concentrations that pose an unacceptable risk. The purpose of this RI is specifically to address discharges from groundwater into other media and direct impacts to groundwater itself. Since mercury is not considered a groundwater contaminant at this site, it is believed that the mercury in sediment is a result of runoff from contaminated soil, which has since been removed to accepted clean-up levels. Consequently, the two sediment samples located in this area (YSA14-SD04 and YSA14-SD06) were not included in the risk assessment in Sections 7 and 8. Instead, the Navy will further assess mercury in sediment near Site 34 where the elevated mercury was detected (YSA14-SD04). Thus, future sediment sampling in this area, which would occur outside the scope of this RI and the subsequent FS addressing groundwater, would focus on delineating the extent of elevated mercury to determine if the area is large enough to warrant an additional action.

6.2.6 Geochemical Results

Sediment pH results were generally neutral, ranging from 6 to 8. Low pHs can result in the mobilization of metals. Grain size analysis indicated that all of the background reference samples were composed of at least 77 percent fine materials with less sand and gravel. Site sediment samples were also composed primarily of fine material with the exception of YSA14-SD02 which was predominantly composed of fine sand. Low percentages of fines

sometimes result in lower metals concentrations. However, concentrations at this location were not notably lower. TOC results ranged from 25,200 milligrams per kilogram (mg/kg) to 66,200 mg/kg. Higher TOC values were generally consistent with the samples containing more fine-grained sediment.

Table 6-1
Site 8 Surface Water Detections
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**RSLs Tap X 10 for SW Adjusted**	**Ecological Screening Value**	YS08-SW01	YS08-SW02	YS08-SW03	YS08-SW04
Sample ID			YS08-SW01-1207	YS08-SW02-1207	YS08-SW03-1207	YS08-SW04-1207
Sample Date			12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name						
Volatile Organic Compounds (UG/L)						
No Detections						
Semivolatile Organic Compounds (UG/L)						
No Detections						
Pesticide/Polychlorinated Biphenyls (UG/L)						
No Detections						
Explosives (UG/L)						
HMX	1,800	330	0.15 U	0.15 U	0.15 U	0.21 J
RDX	6.1	186	0.25 U	0.25 U	0.25 U	0.041 J
Total Metals (UG/L)						
Aluminum	37,000	87	574	293	276	329
Arsenic	0.45	36	10.2 B	10 U	10 U	3.7 J
Barium	7,300	4	36.9 J	31.2 J	35.3 J	31.3 J
Cadmium	18	8.85	1.1 J	0.67 J	0.81 J	0.59 J
Calcium	--	--	224,000	221,000	225,000	220,000
Iron	26,000	1000	370	256	252	278
Magnesium	--	--	627,000	632,000	641,000	625,000
Manganese	880	120	45.4	35.8	36.5	42.6
Potassium	--	--	192,000 J	210,000 J	222,000 J	213,000 J
Sodium	--	--	5,590,000	5,970,000	6,110,000	5,890,000
Dissolved Metals (UG/L)						
Aluminum	37,000	87.0	315 K	101 B	108 B	125 B
Arsenic	0.45	36	4.2 B	10 U	10 U	5.9 J
Barium	7,300	4.0	35.3 J	29.1 J	34.1 J	33.2 J
Cadmium	18	8.80	0.33 J	0.92 J	0.69 J	0.58 J
Calcium	--	--	212,000	229,000	234,000	224,000
Iron	26,000	1,000	77.4 K	22.7 B	100 U	56.9 B
Magnesium	--	--	575,000	653,000	639,000	638,000
Manganese	880	120	42.7	30.8	33.3	34.5
Potassium	--	--	176,000 J	222,000 J	224,000 J	212,000 J
Sodium	--	--	4,920,000	6,230,000	6,110,000	5,930,000
Zinc	11,000	81	60 U	60 UL	8.1 L	60 UL
Wet Chemistry (MG/L)						
Alkalinity	--	--	140	140	140	140

Notes:

Exceeds all criteria

B - Analyte not detected above the level reported in blanks

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high, actual value may be lower

L - Analyte present, value may be biased low, actual value may be higher

MG/L - Milligrams per liter

NA - Not analyzed

R - Unreliable Result

U - The material was analyed for, but not detected

UG/L - Micrograms per liter

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

Table 6-2
Site 34 Surface Water Detections
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**RSLs Tap X 10 for SW Adjusted**	**Ecological Screening Value**	YSA14-SW01	YSA14-SW02	YSA14-SW03	YSA14-SW04				YSA14-SW05	YSA14-SW06	
Sample ID			YSA14-SW01-1207	YSA14-SW02-1207	YSA14-SW03-1207	YSA14-SW04-1207	YSA14-SW04P-1207	YSA14-SW04-0308	YSA14-SW04P-0308	YSA14-SW05-1207	YSA14-SW06-1207	YSA14-SW06-0308
Sample Date			12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	03/05/08	03/05/08	12/14/07	12/07/07	03/05/08
Chemical Name												
Volatile Organic Compounds (UG/L)												
1,1,1-Trichloroethane	9,100	312	10 U	10 U	10 U	1.8 J	2.3 J	NA	NA	10 U	10 U	NA
1,1-Dichloroethene	340	2,240	10 U	10 U	10 U	11	15	NA	NA	10 U	10 U	NA
Trichloroethene	17	680	10 U	10 U	10 U	33	43	NA	NA	10 U	3.8 J	NA
cis-1,2-Dichloroethene	370	1,940	10 U	10 U	10 U	6.4 J	6.8 J	NA	NA	10 U	10 U	NA
Semivolatile Organic Compounds (UG/L)												
No Detections												
Pesticide/Polychlorinated Biphenyls (UG/L)												
No Detections												
Explosives (UG/L)												
2-Amino-4,6-dinitrotoluene	73	1,480	0.3 U	0.3 U	0.3 U	NA	NA	0.3 U	0.29 U	0.29 U	NA	0.22 J
HMX	1,800	330	0.15 U	0.15 U	0.15 U	NA	NA	2.6 K	4.9 K	0.15 U	NA	0.26
Nitrobenzene	3.4	67	0.15 U	0.05 J	0.15 U	NA	NA	0.15 U	0.14 U	0.15 U	NA	0.15 U
RDX	6.1	186	0.25 U	0.25 U	0.25 U	NA	NA	1.1	1.1	0.24 U	NA	0.3
Total Metals (UG/L)												
Aluminum	37,000	87	586	1,170	443	2,120 K	2,520 K	NA	NA	460	622 K	NA
Arsenic	0.45	36	10 U	5.6 B	3.8 B	5.1 J	7.9 J	NA	NA	4.6 B	10 U	NA
Barium	7,300	4	37.9 J	33.1 J	34.4 J	41.5 J	42.8 J	NA	NA	36.2 J	31.9 J	NA
Beryllium	73	0.66	5 U	5 U	5 U	5 U	5 U	NA	NA	0.16 J	5 U	NA
Cadmium	18	8.85	0.75 B	0.86 B	1 B	0.84 J	0.64 J	NA	NA	1 B	0.78 J	NA
Calcium	--	--	209,000	215,000	232,000	224,000	230,000	NA	NA	223,000	151,000	NA
Chromium	110	50	0.74 J	1.5 B	0.42 B	3.4 J	3.8 J	NA	NA	0.64 B	1 J	NA
Copper	1,500	3.7	25 U	25 U	25 U	3.3 L	25 UL	NA	NA	25 U	25 UL	NA
Iron	26,000	1,000	391	1,290	410	2,640 K	2,880 K	NA	NA	430	805 K	NA
Magnesium	--	--	566,000	628,000	685,000	573,000	604,000	NA	NA	632,000	297,000	NA
Manganese	880	120	67.6	54	33.5	116	94.4	NA	NA	54.2	104	NA
Mercury	11	1.1	0.2 UL	0.2 UL	0.2 UL	0.031 L	0.044 L	NA	NA	0.2 UL	0.2 UL	NA
Nickel	730	8.3	1.5 B	1.3 J	40 U	2.6 J	3.3 J	NA	NA	40 U	1.1 J	NA
Potassium	--	--	162,000 J	208,000 J	235,000 J	176,000	184,000	NA	NA	206,000 J	89,100	NA
Selenium	180	71.1	35 UL	35 U	3.4 J	35 UL	35 UL	NA	NA	35 U	35 UL	NA
Silver	180	0.23	10 U	10 U	10 U	10 U	10 U	NA	NA	1.2 J	10 U	NA
Sodium	--	--	4,540,000	5,790,000	6,360,000	4,910,000	4,980,000	NA	NA	5,770,000	2,410,000	NA
Vanadium	260	20	50 U	50 U	50 U	3.7 J	4.2 J	NA	NA	50 U	50 U	NA
Dissolved Metals (UG/L)												
Aluminum	37,000	87	317	132 J	151 J	106 J	106 J	NA	NA	142 J	200 U	NA
Arsenic	0.45	36	5 J	3.8 B	3.6 B	4.7 K	3.9 K	NA	NA	10 U	10 U	NA
Barium	7,300	4	33.9 J	32.7 J	30.8 J	35.6 J	38 J	NA	NA	34.5 J	32.4 J	NA
Cadmium	18	8.8	0.71 B	0.84 B	0.93 B	0.55 J	0.77 J	NA	NA	0.87 B	0.47 J	NA
Calcium	--	--	206,000	224,000	226,000	198,000	220,000	NA	NA	214,000	155,000	NA
Copper	1,500	--	3.2 J	25 U	25 U	4 L	25 UL	NA	NA	25 U	25 UL	NA
Iron	26,000	--	42.7 J	30.7 B	40.7 B	85 K	70.2 B	NA	NA	38.8 B	49.4 B	NA
Magnesium	--	--	554,000	654,000	667,000	464,000	548,000	NA	NA	605,000	293,000	NA
Manganese	880	--	61.9	30.8	24.2	93.1 K	79.9 K	NA	NA	45.1	103 K	NA
Nickel	730	--	40 U	1.4 J	40 U	1 J	1.4 J	NA	NA	0.93 J	0.99 J	NA
Potassium	--	--	160,000 J	222,000 J	220,000 J	147,000	169,000	NA	NA	198,000 J	89,000	NA
Sodium	--	--	4,460,000	6,090,000	6,120,000	3,910,000	4,660,000	NA	NA	5,550,000	2,470,000	NA

Table 6-2
Site 34 Surface Water Detections
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**RSLs Tap X 10 for SW Adjusted**	**Ecological Screening Value**	YSA14-SW01	YSA14-SW02	YSA14-SW03	YSA14-SW04				YSA14-SW05	YSA14-SW06	
Sample ID			YSA14-SW01-1207	YSA14-SW02-1207	YSA14-SW03-1207	YSA14-SW04-1207	YSA14-SW04P-1207	YSA14-SW04-0308	YSA14-SW04P-0308	YSA14-SW05-1207	YSA14-SW06-1207	YSA14-SW06-0308
Sample Date			12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	03/05/08	03/05/08	12/14/07	12/07/07	03/05/08
Chemical Name												
Wet Chemistry (MG/L)												
Alkalinity	--	--	160	140	130	170	NA	NA	NA	150	190	NA

Notes:

Exceeds all criteria

B - Analyte not detected above the level reported in blanks

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high, actual value may be lower

L - Analyte present, value may be biased low, actual value may be higher

MG/L - Milligrams per liter

NA - Not analyzed

U - The material was analyed for, but not detected

UG/L - Micrograms per liter

UL - Analyte not detected, quantitation limit is probably higher

Table 6-3
Upstream Reference Surface Water Detections
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	YBKG-SW01		YBKG-SW02	YBKG-SW03	YBKG-SW04	YBKG-SW05	YBKG-SW06
Sample ID	YBKG-SW01-1207	YBKG-SW01P-1207	YBKG-SW02-1207	YBKG-SW03-1207	YBKG-SW04-1207	YBKG-SW05-1207	YBKG-SW06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Total Metals (UG/L)							
Aluminum	1,480	1,220	411	536	809	677	533
Arsenic	10 U	3.6 J	5.8 B	10 U	4.3 B	4.1 B	3.8 B
Barium	34 J	34.6 J	28.9 J	33.5 J	33.6 J	35.4 J	35.5 J
Cadmium	0.67 B	0.77 B	0.92 B	0.78 B	0.66 J	0.86 J	0.86 B
Calcium	117,000	116,000	216,000	225,000	232,000	218,000	214,000
Chromium	2.2 J	1.8 J	0.39 B	0.41 B	0.84 B	0.62 B	0.69 B
Iron	1,680	1,340	385	510	598	511	570
Lead	10 U	10 U	50 U	50 U	10 U	10 U	13.7 J
Magnesium	165,000	164,000	636,000	656,000	665,000	601,000	615,000
Manganese	136	128	34.6	38.2	45.1	53.3	53.8
Nickel	1.1 B	0.92 B	40 U	1 J	40 U	40 U	0.87 J
Potassium	54,900 J	54,600 J	212,000 J	233,000 J	213,000 J	181,000 J	209,000 J
Selenium	35 UL	35 UL	35 U	3.3 J	35 UL	35 UL	4 J
Sodium	1,380,000	1,380,000	5,980,000	6,390,000	6,000,000	4,940,000	5,850,000
Vanadium	2.4 J	1.3 J	50 U	50 U	50 U	50 U	50 U
Dissolved Metals (UG/L)							
Aluminum	188 J	185 J	146 B	162 B	327 K	300 K	154 B
Barium	29.7 J	27.6 J	32.8 J	35.9 J	31.8 J	30.8 J	33 J
Beryllium	5 U	0.13 J	5 U	5 U	5 U	5 U	5 U
Cadmium	0.53 B	0.68 B	0.72 B	1 B	0.99 J	0.67 J	0.96 B
Calcium	107,000	106,000	228,000	226,000	235,000	217,000	217,000
Chromium	0.44 J	0.59 J	10 U	10 U	0.39 B	10 U	10 U
Iron	30.8 J	42.9 J	58.6 B	42.4 B	78.6 K	37.9 K	47.8 B
Lead	10 U	10 U	14.9 J	50 U	10 U	10 U	50 U
Magnesium	134,000	131,000	668,000	661,000	665,000	594,000	623,000
Manganese	127	126	28.4	26.5	34.8	42.7	32.2
Nickel	1.4 B	1.9 B	40 U	40 U	40 U	40 U	0.89 J
Potassium	45,300 J	44,600 J	229,000 J	224,000 J	206,000 J	183,000 J	209,000 J
Selenium	35 UL	35 UL	3.6 J	35 U	35 UL	35 UL	35 U
Sodium	1,170,000	1,150,000	6,290,000	6,240,000	5,990,000	5,370,000	5,930,000
Zinc	11.8 J	9.3 J	60 U	60 U	60 U	60 U	60 U
Wet Chemistry (MG/L)							
Alkalinity	200	NA	140	130	140	140	140

Notes:

B - Analyte not detected above the level reported in blanks

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high, actual value may be lower

MG/L - Milligrams per liter

NA - Not analyzed

U - The material was analyed for, but not detected

UG/L - Micrograms per liter

UL - Analyte not detected, quantitation limit is probably higher

shaded items indicate a detection

Table 6-4
Upstream Reference Surface Water Analytical Detection Results
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Sample ID	YBKG-SW01-1207	YBKG-SW02-1207	YBKG-SW03-1207	YBKG-SW04-1207	YBKG-SW05-1207	YBKG-SW06-1207
Sample Date	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name						
Field Parameters						
Dissolved Oxygen (mg/L)	9.67	9.67	9.69	11.3	10.3	9.91
Oxidation Reduction Potential (mV)	79	165	204	216	214	209
pH	7.59	8.01	7.94	6.39	7.87	8
Salinity (pct)	0.5	2.2	2.1	2	1.8	2.8
Specific Conductivity (mS/cm)	9.6	36.5	33	32	29.4	4.56
Temperature (°C)	17.9	15.9	15.9	15.4	15.6	16
Turbidity (NTU)	166	0	0	25.6	46.6	0

Sample ID	YS08-SW01-1207	YS08-SW02-1207	YS08-SW03-1207	YS08-SW04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Field Parameter				
Dissolved Oxygen by Horiba (MG/L)	9.74	10.7	10.6	10.2
Oxidation Reduction Potential (MV)	185	143	151	142
pH (PH)	7.91	8.3	8.11	8.1
Salinity (Percent)	1.8	1.9	1.9	1.9
Specific Conductivity (MS/CM)	29.2	30.5	30.7	31.3
Temperature (DEG/C)	16.4	16	16.1	15.9
Turbidity (NTU)	20	8.2	10.2	9.4

Sample ID	YSA14-SW01-1207	YSA14-SW02-1207	YSA14-SW03-1207	YSA14-SW04-0308	YSA14-SW04-1207	YSA14-SW05-1207	YSA14-SW06-0308	YSA14-SW06-1207
Sample Date	12/10/07	12/14/07	12/14/07	3/5/08	12/7/07	12/14/07	3/5/08	12/7/07
Chemical Name								
Field Parameter								
Dissolved Oxygen by Horiba (MG/L)	12.8	9.5	9.59	6	8.44	9.29	8.51	7.75
Oxidation Reduction Potential (MV)	94	140	119	180	-9.00E+00	229	126	162
pH (PH)	7.4	7.78	7.43	6.65	6.4	6.4	7.44	7.61
Salinity (Percent)	1.7	4	4	0.2	1.7	1.8	0.1	0.8
Specific Conductivity (MS/CM)	27.2	36.6	94.5	3.75	28.5	29.2	1.31	14.1
Temperature (DEG/C)	16.1	15.8	15.8	16.8	10.1	15.6	14.9	9.3
Turbidity (NTU)	631	0.00E+00	0.00E+00	29.6	4.2	0.00E+00	32.4	8.6

Notes:

C - Degrees centigrade
mg/L - Milligrams per liter
mS/cm - Milliseimens per centimeter
mV - Millivolts
NTU - Nephelometric turbidity unit
pct - Percent

Table 6-5
CTO-195 YNWS - Site 8, Final Sediment Exceedances
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**RSLs Res Soil X 10 for SD Adjusted**	**Ecological Screening Value**	YS08-SD01	YS08-SD02	YS08-SD03	YS08-SD04
Sample ID			YS08-SD01-1207	YS08-SD02-1207	YS08-SD03-1207	YS08-SD04-1207
Sample Date			12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name						
Volatile Organic Compounds (UG/KG)						
Acetone	61,000,000	--	30 U	27 U	26 U	29
Carbon disulfide	260,000	0.85	30 U	27 U	26 U	15 J
Semivolatile Organic Compounds (UG/KG)						
No Detections						
Pesticide/Polychlorinated Biphenyls (UG/KG)						
No Detections						
Explosives (UG/KG)						
No Detections						
Total Metals (MG/KG)						
Aluminum	77,000	18,000	19,000	18,700 J	18,100 J	26,500 J
Arsenic	3.9	8.2	9	11.4	9.6	13.4
Barium	15,000	48	36.7 J	36.6 J	33.4 J	46.6 J
Beryllium	160	--	1 J	0.74 J	0.69 J	1.1 J
Cadmium	70	1.2	0.32 B	0.21 J	0.19 J	1.1 U
Calcium	--		2,250	2,180	2,090	2,310
Chromium	230	81	41.3	38.2 J	37.5 J	47.9 J
Cobalt	1,500	10	7.2 J	7.2 J	7.1 J	10.5 J
Copper	3,100	34	18.7	16.4	15.9	14.7
Iron	55,000	220,000	28,500	35,300 J	30,400 J	50,300 J
Lead	400	46.7	31.2 J	28.3	27.8	32.3
Magnesium	--	--	7,150	6,410 J	6,280 J	7,670 J
Manganese	1,800	260	213 K	235 J	235 J	412 J
Mercury	23	0.15	0.12 L	0.13 B	0.13 J	0.096 B
Nickel	1,600	20.9	17.1	15.9	15.5	19.5
Potassium	--	--	3,980	3,970 J	3,890 J	4,800 J
Silver	390	1	1 J	0.36 J	0.45 J	2.2 U
Sodium	--	--	12,600	11,400 J	11,400 J	9,960 J
Vanadium	550	57	50.8	46.3 J	46.5 J	60.9 J
Zinc	23,000	150	108	106	99.4	73
Acid Volatile Sulfide/Simultaneously Extractable Metals (UMOL/G)						
Acid volatile sulfide	--	--	6.5	1.3 U	4.8	1.4 U
Cadmium	--	--	6.50E-04 UL	0.0023 J	0.002 J	0.0032 J
Copper	--	--	0.071 L	0.14 B	0.14 B	0.0098 B
Lead	--	--	0.1 L	0.094 J	0.092 J	0.064 J
Nickel	--	--	0.058	0.13 J	0.12 J	0.12 J
SEM/AVS Ratio	--	--	0.17	NA	0.31	NA

Table 6-5
CTO-195 YNWS - Site 8, Final Sediment Exceedances
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**RSLs Res Soil X 10 for SD Adjusted**	**Ecological Screening Value**	YS08-SD01	YS08-SD02	YS08-SD03	YS08-SD04
Sample ID			YS08-SD01-1207	YS08-SD02-1207	YS08-SD03-1207	YS08-SD04-1207
Sample Date			12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name						
Silver	--	--	0.002 UL	0.0019 U	0.003 J	0.002 U
Zinc	--	--	0.88	1.3	1.1	0.95
Wet Chemistry (MG/KG)						
Total organic carbon (TOC)	--	--	55,100	51,500	50,100	50,800
pH	--	--	6.7	6.5	7.1	7.4
Grain Size (PCT)						
Coarse Sand (%)	--	--	0.3	0.1	0.2	0.1
Fine Sand (%)	--	--	2.2	1.4	1.7	0.6
Fines (%)	--	--	92.2	90.1	90.1	94.9
GS03 Sieve 3" (75 mm)	--	--	100	100	100	100
GS05 Sieve 2" (50 mm)	--	--	100	100	100	100
GS06 Sieve 1.5" (37.5 mm)	--	--	100	100	100	100
GS07 Sieve 1" (25.0 mm)	--	--	100	100	100	100
GS08 Sieve 0.75" (19.0 mm)	--	--	100	100	100	100
GS10 Sieve 0.375" (9.5 mm)	--	--	100	100	100	100
Gravel (%)	--	--	0.6	0.00E+00	0.00E+00	0.00E+00
Medium Sand (%)	--	--	4.6	8.4	8	4.4
Sieve No. 004 (4.75 mm)	--	--	99.4	100	100	100
Sieve No. 010 (2.00 mm)	--	--	99	99.9	99.8	99.9
Sieve No. 020 (850 um)	--	--	95.2	92.4	93.1	96.1
Sieve No. 040 (425 um)	--	--	94.4	91.5	91.8	95.5
Sieve No. 060 (250 um)	--	--	93.8	91	91.1	95.2
Sieve No. 100 (150 um)	--	--	93.3	90.7	90.7	95.1
Sieve No. 140 (106 um)	--	--	93.4	90.7	90.8	95.1
Sieve No. 200 (75 um)	--	--	92.2	90.1	90.1	94.9

Notes:

Exceeds all criteria

B - Analyte not detected above the level reported in blanks
J - Analyte present, value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower
L - Analyte present, value may be biased low, actual value may be higher
MG/KG - Milligrams per kilogram
NA - Not analyzed
PCT - Percent
R - Unreliable Result
U - The material was analyed for, but not detected
UG/KG - Micrograms per kilogram
UJ - Analyte not detected, quantitation limit may be inaccurate
UL - Analyte not detected, quantitation limit is probably higher
UMOL/G - Micromoles per gram

Table 6-6
CTO-195 YNWS - Site 34, Final Sediment Exceedances
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**RSLs Res Soil X 10 for SD Adjusted**	**Ecological Screening Value**	YSA14-SD01	YSA14-SD02	YSA14-SD03	YSA14-SD04		YSA14-SD05	YSA14-SD06
Sample ID			YSA14-SD01-1207	YSA14-SD02-1207	YSA14-SD03-1207	YSA14-SD04-1207	YSA14-SD04P-1207	YSA14-SD05-1207	YSA14-SD06-1207
Sample Date			12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	12/14/07	12/07/07
Chemical Name									
Volatile Organic Compounds (UG/KG)									
Acetone	61,000,000	--	30 U	19 U	28 U	35 U	31 J	21 J	25 U
Carbon disulfide	260,000	0.85	30 U	19 U	28 U	35 U	39 U	13 J	25 U
Xylene, total	300,000	160	30 U	15 J	28 U	35 U	39 U	27 U	25 U
Semivolatile Organic Compounds (UG/KG)									
No Detections									
Pesticide/Polychlorinated Biphenyls (UG/KG)									
No Detections									
Explosives (UG/KG)									
No Detections									
Total Metals (MG/KG)									
Aluminum	77,000	18,000	18,500	6,390 J	21,400 J	18,600	18,000	18,800 J	16,700
Arsenic	3.9	8.2	13	8.3	12.4	12.1	12.9	8.8	12.2
Barium	15,000	48	38.7 J	12.7 J	40.1 J	36.1 J	35.2 J	34 J	33.9 J
Beryllium	160	--	1.1 J	0.37 J	0.88 J	0.98 J	0.99 J	0.78 J	0.88 J
Cadmium	70	1.2	0.51 B	0.058 J	0.32 J	0.53 B	0.56 B	0.095 J	0.36 B
Calcium	--		2,630	3,920	2,460	2,730	2,910	2,040	2,260
Chromium	230	81	39.6	16.3 J	44.5 J	39.8	39.7	36.4 J	34.5
Cobalt	1,500	10	8.2 J	3.3 J	8.1 J	9 J	9.5 J	7.8 J	7 J
Copper	3,100	34	17.8	5.3	19.2	19.8	20.2	9.5	16.6
Iron	55,000	220,000	38,100	26,400 J	35,300 J	33,600	35,900	35,200 J	36,500
Lead	400	46.7	27.9 J	8.3	32.9	30.1 K	30.2 K	18.7	25.6 K
Magnesium	--	--	7,180	2,440 J	6,990 J	6,820	6,930	5,950 J	5,960
Manganese	1,800	260	368 K	100 J	214 J	339	358	389 J	361
Mercury	23	0.15	0.11 L	0.05 B	0.16 J	0.89	1.2	0.069 B	0.091 L
Nickel	1,600	20.9	17.3	5.8	18.2	19.4	19.7	14.2	16
Potassium	--	--	4,080	2,000 J	4,340 J	4,090	4,090	3,670 J	3,570
Silver	390	1	1.2 J	0.11 J	0.64 J	1.2 J	1.1 J	2.1 U	0.76 J
Sodium	--	--	11,900	3,380 J	11,300 J	13,500	13,900	7,380 J	9,820
Vanadium	550	57	48.3	18.6 J	52.7 J	57	55.2	45.4 J	41.5
Zinc	23,000	150	119	35.1	129	116	118	56.4	101
Acid Volatile Sulfide/Simultaneously Extractable Metals (UMOL/G)									
Acid volatile sulfide	--	--	1.7	0.96	1.4 U	7.3	15.1	3.2	2.5
Cadmium	--	--	0.0012 L	9.80E-04 J	0.0016 J	0.0025 L	8.20E-04 UL	8.40E-04 J	0.0014 L
Copper	--	--	0.063 L	0.0087 B	0.15 B	0.063 L	0.019 L	0.005 U	0.098 L
Lead	--	--	0.071 L	0.018 J	0.11 J	0.082 L	0.087 L	0.045 J	0.098 L
Nickel	--	--	0.048	0.032 J	0.12 J	0.075 J	0.061 J	0.092 J	0.075 J
SEM/AVS Ratio	--	--	0.71	0.46	NA	0.18	0.093	0.22	0.56
Zinc	--	--	1	0.38	1.3	1.1	1.2	0.55	1.1
Wet Chemistry (MG/KG)									
Total organic carbon (TOC)	--	--	63,200	25,200	53,700	66,200	NA	34,800	56,200
pH	--	--	7	7.4	6.9	7.1	NA	7.4	6.9

Table 6-6
CTO-195 YNWS - Site 34, Final Sediment Exceedances
Remedial Investigation for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**RSLs Res Soil X 10 for SD Adjusted**	**Ecological Screening Value**	YSA14-SD01	YSA14-SD02	YSA14-SD03	YSA14-SD04		YSA14-SD05	YSA14-SD06
Sample ID			YSA14-SD01-1207	YSA14-SD02-1207	YSA14-SD03-1207	YSA14-SD04-1207	YSA14-SD04P-1207	YSA14-SD05-1207	YSA14-SD06-1207
Sample Date			12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	12/14/07	12/07/07
Chemical Name									
Grain Size (PCT)									
Coarse Sand (%)	--	--	1.2	0.7	0.2	10.4	NA	0.2	0.6
Fine Sand (%)	--	--	2.6	65	5.7	1.7	NA	2	1.7
Fines (%)	--	--	84.6	28.9	86.9	79.1	NA	93.7	92.1
GS03 Sieve 3" (75 mm)	--	--	100	100	100	100	NA	100	100
GS05 Sieve 2" (50 mm)	--	--	100	100	100	100	NA	100	100
GS06 Sieve 1.5" (37.5 mm)	--	--	100	100	100	100	NA	100	100
GS07 Sieve 1" (25.0 mm)	--	--	100	100	100	100	NA	100	100
GS08 Sieve 0.75" (19.0 mm)	--	--	100	100	100	100	NA	100	100
GS10 Sieve 0.375" (9.5 mm)	--	--	100	99.9	100	100	NA	100	100
Gravel (%)	--	--	0.00E+00	0.4	0.5	0.00E+00	NA	0.00E+00	0.00E+00
Medium Sand (%)	--	--	11.6	5.1	6.7	8.8	NA	4.2	5.5
Sieve No. 004 (4.75 mm)	--	--	100	99.6	99.5	100	NA	100	100
Sieve No. 010 (2.00 mm)	--	--	98.8	99	99.2	89.6	NA	99.8	99.4
Sieve No. 020 (850 um)	--	--	88.9	96.7	95.3	81.6	NA	96.7	94.8
Sieve No. 040 (425 um)	--	--	87.3	93.9	92.6	80.8	NA	95.6	93.9
Sieve No. 060 (250 um)	--	--	86.5	72.9	90.7	80.4	NA	95	93.3
Sieve No. 100 (150 um)	--	--	85.9	43.2	89	79.7	NA	94.5	92.9
Sieve No. 140 (106 um)	--	--	86	50.4	89.4	79.8	NA	94.7	93
Sieve No. 200 (75 um)	--	--	84.6	28.9	86.9	79.1	NA	93.7	92.1

Notes:

Exceeds all criteria

B - Analyte not detected above the level reported in blanks
J - Analyte present, value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower
L - Analyte present, value may be biased low, actual value may be higher
MG/KG - Milligrams per kilogram
NA - Not analyzed
PCT - Percent
R - Unreliable Result
U - The material was analyed for, but not detected
UG/KG - Micrograms per kilogram
UJ - Analyte not detected, quantitation limit may be inaccurate
UL - Analyte not detected, quantitation limit is probably higher
UMOL/G - Micromoles per gram

Table 6-7
Upstream Reference Sediment Analytical Detection Results
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	YBKG-SD01		YBKG-SD02	YBKG-SD03	YBKG-SD04	YBKG-SD05	YBKG-SD06
Sample ID	YBKG-SD01-1207	YBKG-SD01P-1207	YBKG-SD02-1207	YBKG-SD03-1207	YBKG-SD04-1207	YBKG-SD05-1207	YBKG-SD06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Volatile Organic Compounds (UG/KG)							
Acetone	24 U	21 U	27 U	29 U	28 U	26 U	39
Carbon disulfide	24 U	21 U	27 U	29 U	28 U	26 U	13 J
Total Metals (MG/KG)							
Aluminum	12,500	8,640	19,300 J	20,900 J	17,900	17,600	18,800 J
Arsenic	14.8	7.1	12.4	12.6	12.9	14.5	10.2
Barium	30.7 J	20.7 J	35 J	38.1 J	38 J	38.4 J	37.7 J
Beryllium	0.92 J	0.65 J	0.56 J	0.87 J	1.1	1.1	0.81 J
Cadmium	0.28 B	0.39 B	0.074 J	0.3 J	0.33 B	0.39 B	0.11 J
Calcium	1,810	2,250	1,900	2,380	2,370	2,550	2,410
Chromium	33.3	21.2	40.4 J	42.6 J	38.9	38.6	38.2 J
Cobalt	7.3 J	5.4 J	6.7 J	8.3 J	8.1 J	7.8 J	7.4 J
Copper	12.7	11.1	16.1	17.9	16.4	16.8	12.7
Cyanide	5 UL	4.7 UL	0.34 L	0.22 L	5.7 UL	6.4 UL	0.29 L
Iron	27,700	18,400	37,200 J	35,200 J	37,200	37,100	25,700 J
Lead	22.9 J	21.3 J	29.5	33	27.7 J	29.2 J	28.8
Magnesium	5,320	4,330	6,020 J	6,740 J	6,800	6,620	6,120 J
Manganese	122 K	104 K	249 J	237 J	476 K	496 K	428 J
Mercury	0.15 L	0.27	0.13 J	0.13 J	0.1 L	0.096 L	0.073 B
Nickel	13.7	10.2	14.3	17.3	16.6	16.4	15.8
Potassium	3,860	2,380	3,670 J	4,160 J	3,830	3,750	3,720 J
Silver	10.9	6.9	0.61 J	1.4 J	0.77 J	0.94 J	0.62 J
Sodium	8,900	8,400	10,600 J	11,000 J	11,400	10,800	6,570 J
Vanadium	39.8	30.2	50 J	52.1 J	46.2	47.8	46.2 J
Zinc	77.6	77.6	83.2	119	114	109	84.6
Acid Volatile Sulfide/Simultaneously Extractable Metals (UMOL/G)							
Acid volatile sulfide	3.5	3.7	1.3 U	27.9	8.7	2.6	2.3
Cadmium	0.0018 L	4.40E-04 UL	7.20E-04 J	0.0014 J	6.00E-04 UL	7.40E-04 L	9.80E-04 J
Copper	0.066 L	0.069 UL	0.14 B	0.13 B	0.079 L	0.085 L	0.02 B
Lead	0.067 L	0.069 L	0.094 J	0.091 J	0.086 L	0.08 L	0.042 J
Nickel	0.06	0.055	0.095 J	0.1 J	0.078	0.056	0.095 J
SEM/AVS Ratio	0.29	0.26	NA	0.05	0.14	0.42	0.27
Silver	0.037	0.035 L	0.0035 J	0.0019 U	0.0072 B	0.0034 B	0.0019 U
Zinc	0.75	0.71	0.87	1.1	0.96	0.89	0.47
Wet Chemistry (MG/KG)							
Total organic carbon (TOC)	32,400	NA	64,700	54,200	64,100	68,400	43,700
pH	7.3	NA	6.9	6.7	7	6.7	7.3
Grain Size (PCT)							
Coarse Sand (%)	0.7	NA	0.9	1.5	1.9	1.3	0.7
Fine Sand (%)	9.1	NA	5.5	5.1	1.7	3.2	3.1
Fines (%)	77.9	NA	79.6	83.4	78.8	80.7	91.4
GS03 Sieve 3" (75 mm)	100	NA	100	100	100	100	100
GS05 Sieve 2" (50 mm)	100	NA	100	100	100	100	100
GS06 Sieve 1.5" (37.5 mm)	100	NA	100	100	100	100	100
GS07 Sieve 1" (25.0 mm)	100	NA	100	100	100	100	100
GS08 Sieve 0.75" (19.0 mm)	100	NA	100	100	100	100	100
GS10 Sieve 0.375" (9.5 mm)	100	NA	100	100	100	100	100
Gravel (%)	1.1	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Medium Sand (%)	11.2	NA	14	9.9	17.7	14.8	4.7
Sieve No. 004 (4.75 mm)	98.9	NA	100	100	100	100	100
Sieve No. 010 (2.00 mm)	98.2	NA	99.1	98.5	98.1	98.7	99.3
Sieve No. 020 (850 um)	90.1	NA	89.4	92	82.4	85.9	96
Sieve No. 040 (425 um)	87	NA	85.1	88.6	80.4	83.9	94.5
Sieve No. 060 (250 um)	85	NA	82.9	86.7	79.7	83	93.5
Sieve No. 100 (150 um)	82	NA	81.3	85.2	79.3	82.2	92.6
Sieve No. 140 (106 um)	82.8	NA	81.7	85.6	79.3	82.4	92.8
Sieve No. 200 (75 um)	77.9	NA	79.6	83.4	78.8	80.7	91.4

Notes:

B - Analyte not detected above the level reported in blanks
J - Analyte present, value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower
L - Analyte present, value may be biased low, actual value may be higher
MG/KG - Milligrams per kilogram
NA - Not analyzed
PCT - Percent
U - The material was anlyzed for, but not detected
UG/KG - Micrograms per kilogram
UL - Analyte not detected, quantitation limit is probably higher
UMOL/G - micromoles per gram
shaded items indicate a detction

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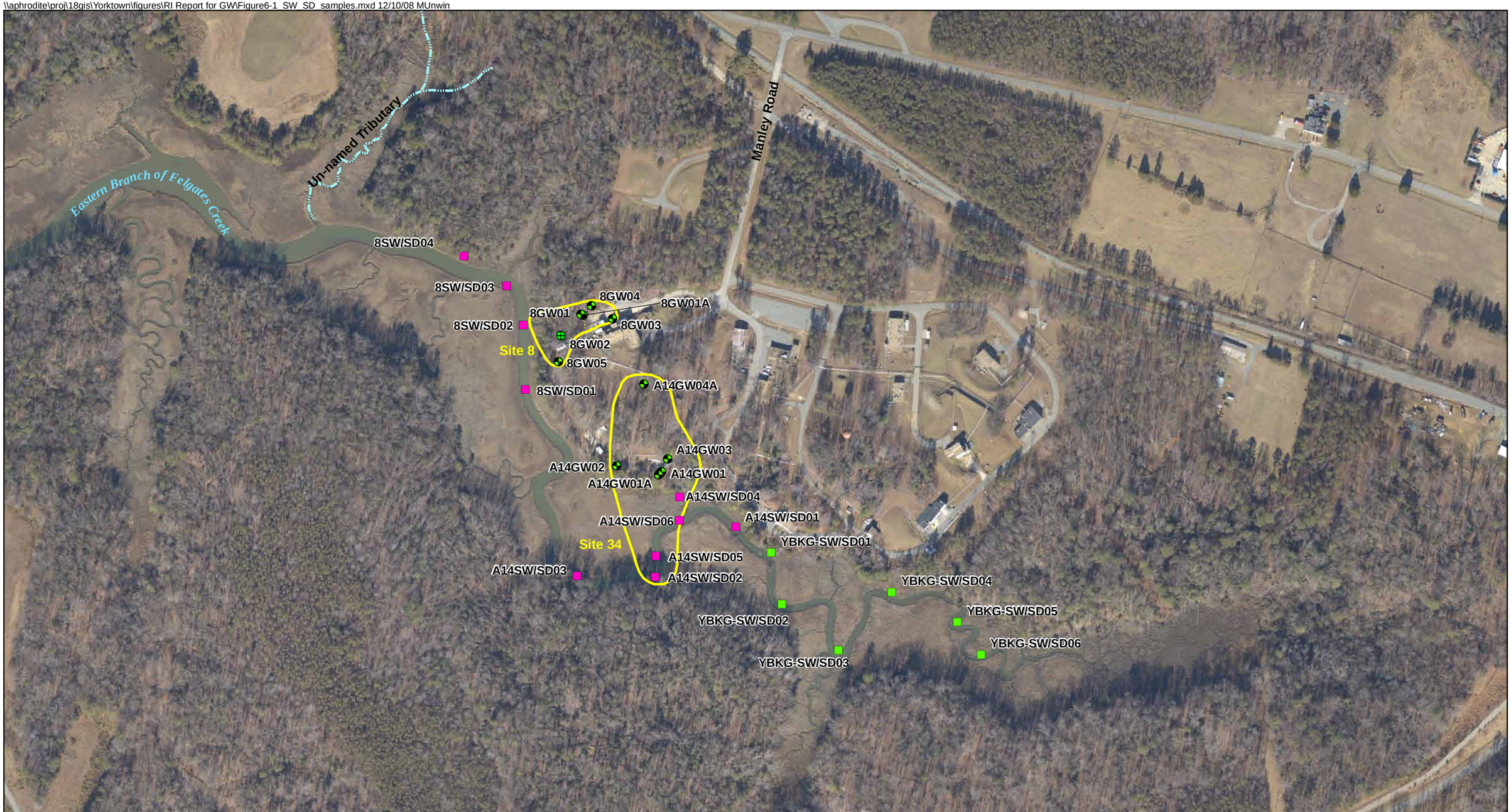

Legend

- Surface Water and Sediment Sample Locations
- Up-gradient Surface Water and Sediment sample locations
- Existing Monitoring Well (location surveyed)
- Existing Monitoring Well (location approximated)
- Drainage
- Study Areas*

*All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

N

0 300 600 Feet

Figure 6-1
Surface Water and Sediment Sample Locations
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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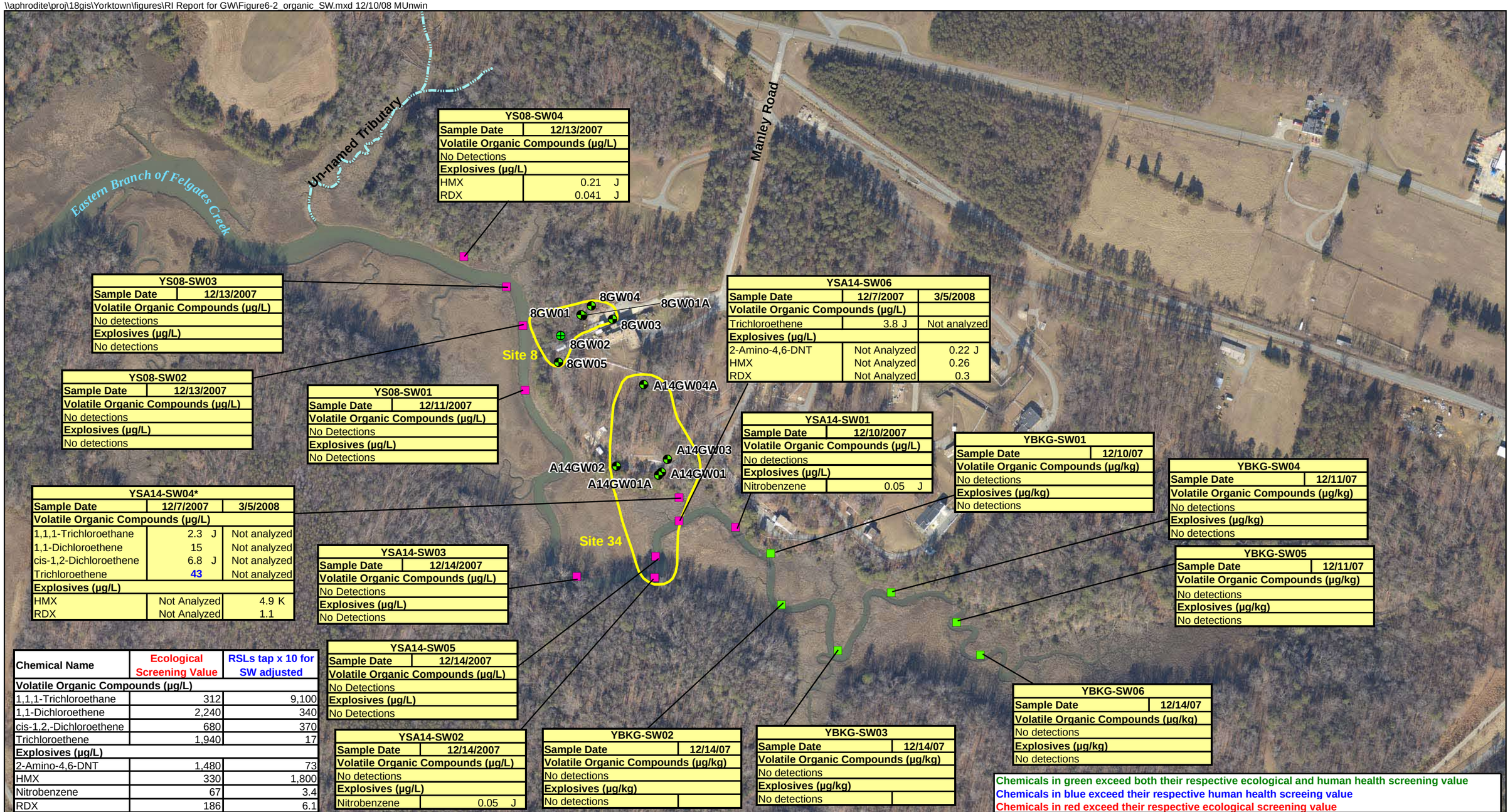

Chemical Name	Ecological Screening Value	RSLs tap x 10 for SW adjusted
Volatile Organic Compounds (µg/L)		
1,1,1-Trichloroethane	312	9,100
1,1-Dichloroethene	2,240	340
cis-1,2,-Dichloroethene	680	370
Trichloroethene	1,940	17
Explosives (µg/L)		
2-Amino-4,6-DNT	1,480	73
HMX	330	1,800
Nitrobenzene	67	3.4
RDX	186	6.1

Legend

- Surface Water and Sediment Sample Locations
- Up-gradient Surface Water and Sediment sample locations
- Existing Monitoring Well (location surveyed)
- Existing Monitoring Well (location approximated)
- Drainage
- Study Areas

* Duplicate sample collected, highest concentration shown

All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

J - Analyte present, value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower

N

0 300 600 Feet

Figure 6-2
Organic Detections and Exceedances in Surface Water
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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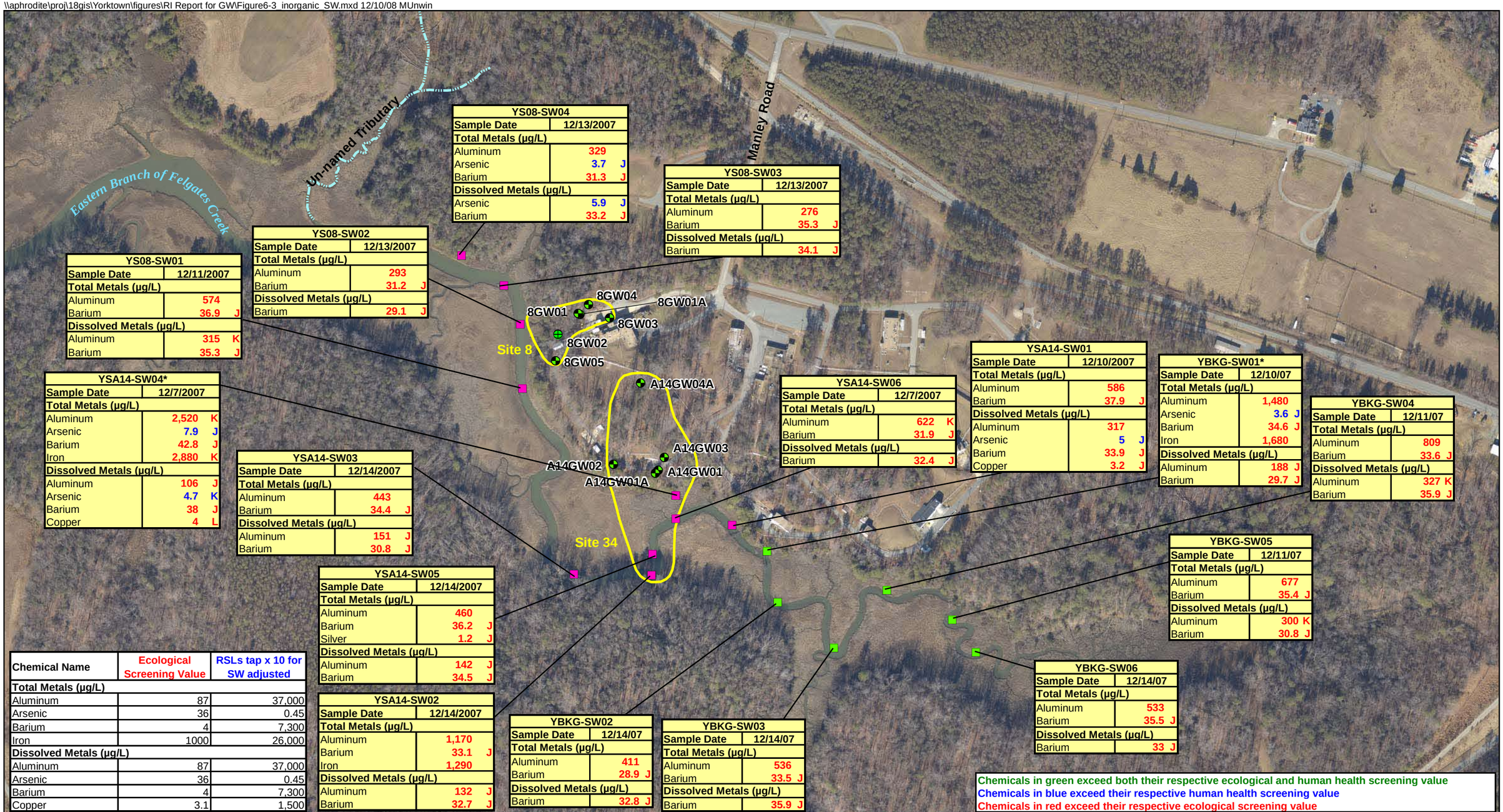

YS08-SW04	
Sample Date	12/13/2007
Total Metals (µg/L)	
Aluminum	329
Arsenic	3.7 J
Barium	31.3 J
Dissolved Metals (µg/L)	
Arsenic	5.9 J
Barium	33.2 J

YS08-SW03	
Sample Date	12/13/2007
Total Metals (µg/L)	
Aluminum	276
Barium	35.3 J
Dissolved Metals (µg/L)	
Barium	34.1 J

YS08-SW02	
Sample Date	12/13/2007
Total Metals (µg/L)	
Aluminum	293
Barium	31.2 J
Dissolved Metals (µg/L)	
Barium	29.1 J

YS08-SW01	
Sample Date	12/11/2007
Total Metals (µg/L)	
Aluminum	574
Barium	36.9 J
Dissolved Metals (µg/L)	
Aluminum	315 K
Barium	35.3 J

YSA14-SW04*	
Sample Date	12/7/2007
Total Metals (µg/L)	
Aluminum	2,520 K
Arsenic	7.9 J
Barium	42.8 J
Iron	2,880 K
Dissolved Metals (µg/L)	
Aluminum	106 J
Arsenic	4.7 K
Barium	38 J
Copper	4 L

YSA14-SW03	
Sample Date	12/14/2007
Total Metals (µg/L)	
Aluminum	443
Barium	34.4 J
Dissolved Metals (µg/L)	
Aluminum	151 J
Barium	30.8 J

YSA14-SW05	
Sample Date	12/14/2007
Total Metals (µg/L)	
Aluminum	460
Barium	36.2 J
Silver	1.2 J
Dissolved Metals (µg/L)	
Aluminum	142 J
Barium	34.5 J

YSA14-SW02	
Sample Date	12/14/2007
Total Metals (µg/L)	
Aluminum	1,170
Barium	33.1 J
Iron	1,290
Dissolved Metals (µg/L)	
Aluminum	132 J
Barium	32.7 J

YKBG-SW02	
Sample Date	12/14/07
Total Metals (µg/L)	
Aluminum	411
Barium	28.9 J
Dissolved Metals (µg/L)	
Barium	32.8 J

YKBG-SW03	
Sample Date	12/14/07
Total Metals (µg/L)	
Aluminum	536
Barium	33.5 J
Dissolved Metals (µg/L)	
Barium	35.9 J

YSA14-SW06	
Sample Date	12/7/2007
Total Metals (µg/L)	
Aluminum	622 K
Barium	31.9 J
Dissolved Metals (µg/L)	
Barium	32.4 J

YSA14-SW01	
Sample Date	12/10/2007
Total Metals (µg/L)	
Aluminum	586
Barium	37.9 J
Dissolved Metals (µg/L)	
Aluminum	317
Arsenic	5 J
Barium	33.9 J
Copper	3.2 J

YBKG-SW01*	
Sample Date	12/10/07
Total Metals (µg/L)	
Aluminum	1,480
Arsenic	3.6 J
Barium	34.6 J
Iron	1,680
Dissolved Metals (µg/L)	
Aluminum	188 J
Barium	29.7 J

YBKG-SW04	
Sample Date	12/11/07
Total Metals (µg/L)	
Aluminum	809
Barium	33.6 J
Dissolved Metals (µg/L)	
Aluminum	327 K
Barium	35.9 J

YBKG-SW05	
Sample Date	12/11/07
Total Metals (µg/L)	
Aluminum	677
Barium	35.4 J
Dissolved Metals (µg/L)	
Aluminum	300 K
Barium	30.8 J

YBKG-SW06	
Sample Date	12/14/07
Total Metals (µg/L)	
Aluminum	533
Barium	35.5 J
Dissolved Metals (µg/L)	
Barium	33 J

Chemical Name	Ecological Screening Value	RSLs tap x 10 for SW adjusted
Total Metals (µg/L)		
Aluminum	87	37,000
Arsenic	36	0.45
Barium	4	7,300
Iron	1000	26,000
Dissolved Metals (µg/L)		
Aluminum	87	37,000
Arsenic	36	0.45
Barium	4	7,300
Copper	3.1	1,500

Legend

- Surface Water and Sediment Sample Locations
- Up-gradient Surface Water and Sediment sample locations
- Existing Monitoring Well (location surveyed)
- Existing Monitoring Well (location approximated)
- Drainage
- Study Areas

* Duplicate sample collected, highest concentration shown

All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

K - Analyte present, value may be biased high, actual value may be lower
J - Analyte present, value may or may not be accurate or precise
L - Analyte present, value may be biased low, actual value may be higher

N

0 300 600 Feet

Figure 6-3
Inorganic Exceedances in Surface Water
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

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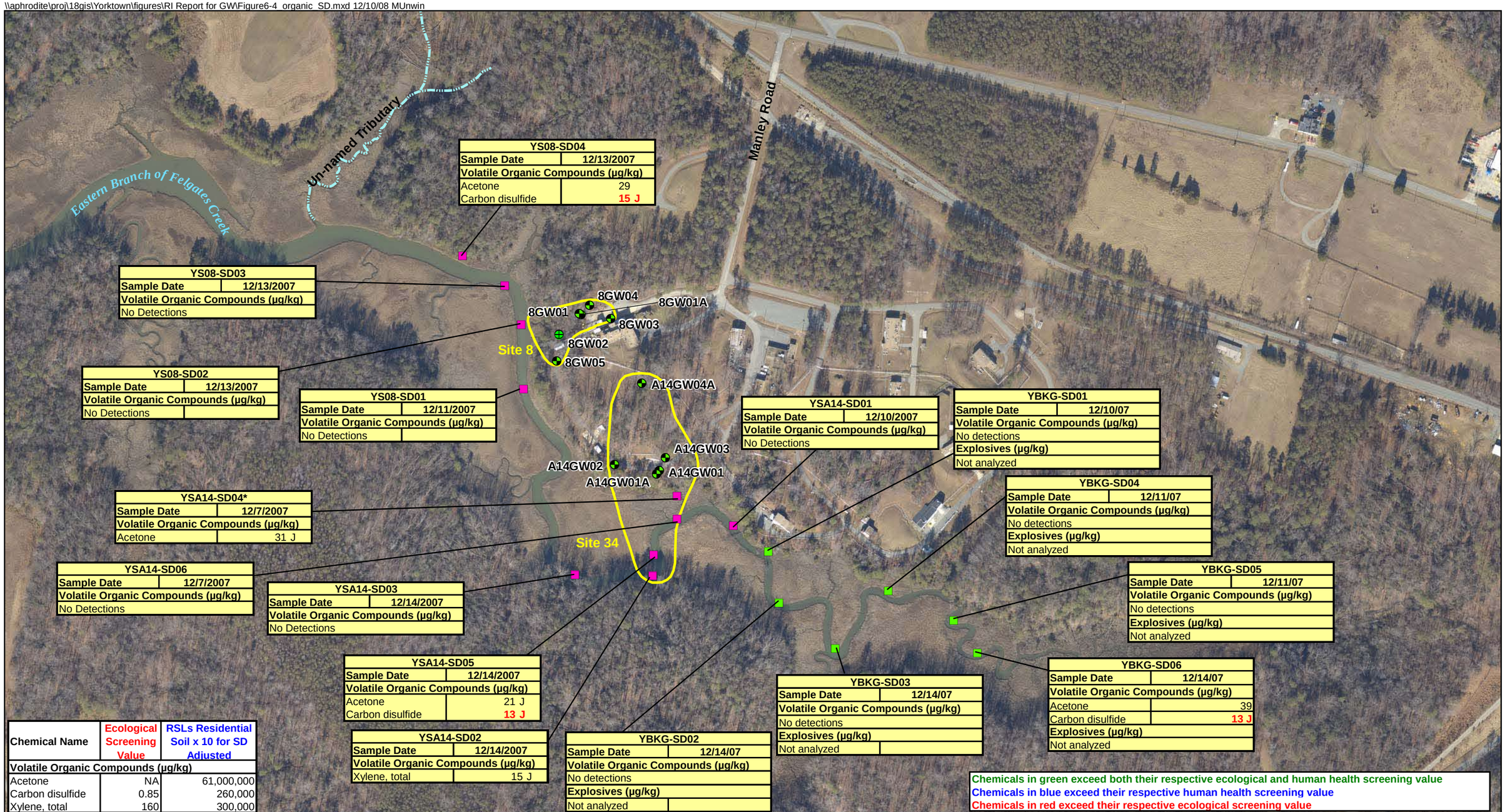

Chemical Name	Ecological Screening Value	RSLs Residential Soil x 10 for SD Adjusted
Volatile Organic Compounds (µg/kg)		
Acetone	NA	61,000,000
Carbon disulfide	0.85	260,000
Xylene, total	160	300,000

Chemicals in green exceed both their respective ecological and human health screening value
Chemicals in blue exceed their respective human health screening value
Chemicals in red exceed their respective ecological screening value

Legend

- Surface Water and Sediment Sample Locations
- Up-gradient Surface Water and Sediment sample locations
- Existing Monitoring Well (location surveyed)
- Existing Monitoring Well (location approximated)
- Drainage
- Study Areas

* Duplicate sample collected, highest concentration shown

All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

J - Analyte present, value may or may not be accurate or precise
NA - Not applicable

N

0 300 600 Feet

Figure 6-4
Organic Detections and Exceedances in Sediment
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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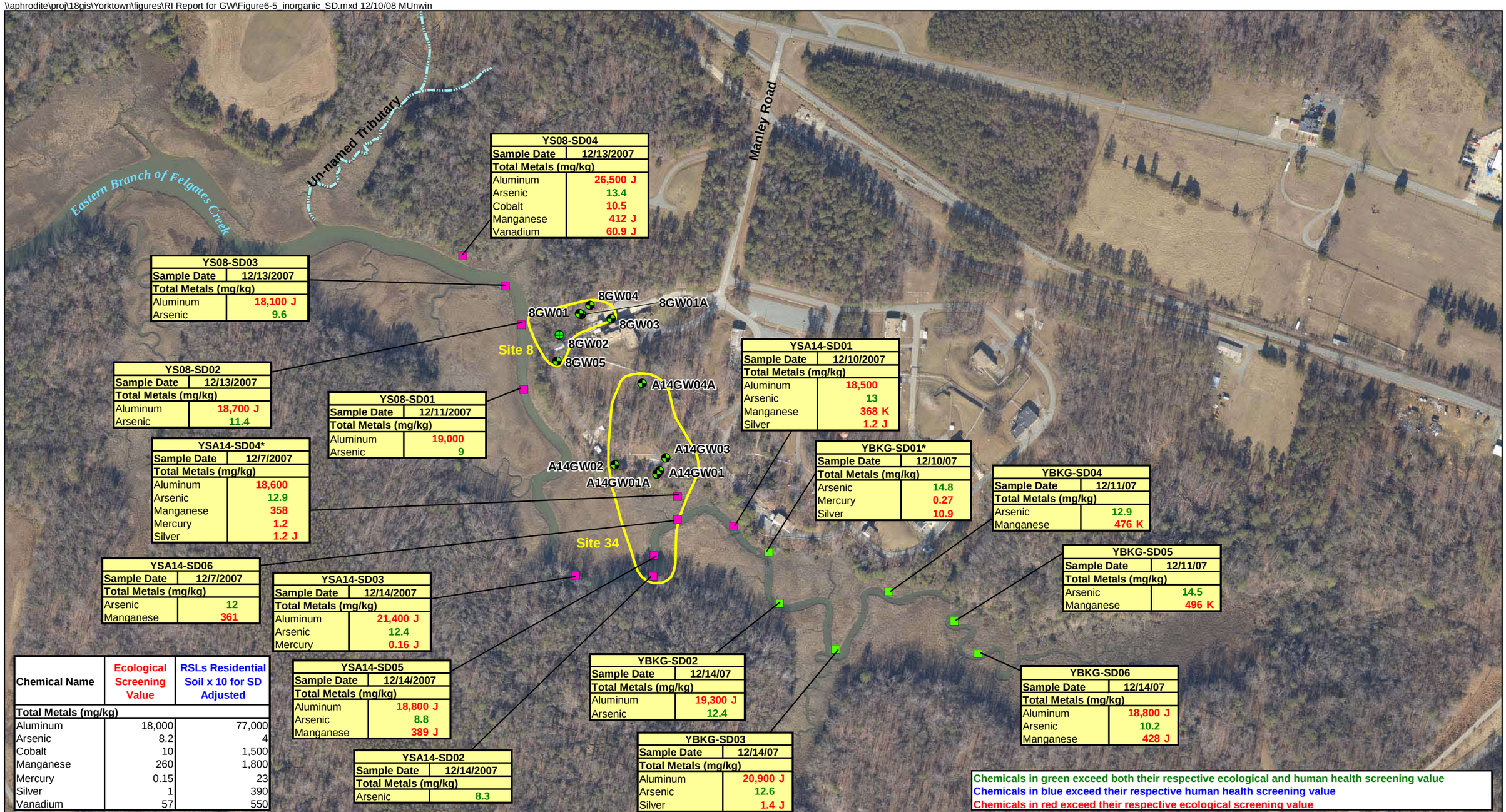

Chemical Name	Ecological Screening Value	RSLs Residential Soil x 10 for SD Adjusted
Total Metals (mg/kg)		
Aluminum	18,000	77,000
Arsenic	8.2	4
Cobalt	10	1,500
Manganese	260	1,800
Mercury	0.15	23
Silver	1	390
Vanadium	57	550

Legend

- Surface Water and Sediment Sample Locations
- Up-gradient Surface Water and Sediment sample locations
- Existing Monitoring Well (location surveyed)
- Existing Monitoring Well (location approximated)
- Drainage
- Study Areas

* Duplicate sample collected, highest concentration shown

All study area boundaries are solely for the purpose of showing general site locations. They are not intended to connote the extent of contamination, boundaries of investigation, or delineation of media associated with a particular site.

J - Analyte present, value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower

N

0 300 600 Feet

Figure 6-5
Inorganic Exceedances in Sediment
Remedial Investigation Report for Groundwater
Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

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SECTION 7

Human Health Risk Assessment

This section presents the HHRA for Sites 8 and 34. Section 7.1 presents the methodology used for the HHRAs for Sites 8 and 34. Section 7.2 presents the HHRA for Site 8, Section 7.3 presents the HHRA for Site 34, and Section 7.4 presents the HHRA for surface water and sediment for both sites combined.

7.1 Human Health Risk Assessment Methodology

This section presents the methodology used to assess the potential human health risks associated with exposure to site-related constituents in groundwater at Sites 8 and 34, and surface water and sediment at Sites 8 and 34 combined under current and potential future site use. Because both sites feed into the same surface water body, risks associated with surface water and sediment were addressed together for Sites 8 and 34. Soil and sediment removal actions have been conducted at these sites. Therefore, risks associated with exposure to soil were not evaluated. The methodology for the HHRA that is common to each of the sites is presented in this section. The site-specific HHRA evaluations for each site and for surface water and sediment are presented in Sections 7.2 through 7.4.

7.1.1 Scope of Risk Assessment

The HHRA consists of the following components:

- Identification of COPCs
- Exposure assessment
- Toxicity assessment
- Risk characterization
- Uncertainty assessment

These components are described in the following sections. Spreadsheets for each site were prepared in accordance with *Risk Assessment Guidance for Superfund* (*RAGS), Volume 1, Human Health Evaluation Manual, Part D* (USEPA, 2001a) to screen for COPCs and to calculate risks estimates associated with the COPCs. These spreadsheets are presented for each site individually in **Appendices G through I**.

7.1.2 Identification of COPCs

The identification of COPCs includes data collection, data evaluation, and data screening. The data collection and evaluation steps involve gathering and reviewing the available site data and identifying a set of data for the risk assessment that meets project-specific data quality objectives (DQOs). This data set is then further screened against concentrations that are protective of human health to reduce the data set to those constituents and media of potential concern.

Data Evaluation and Selection

Detailed results for sampling that was performed at Sites 8 and 34 are presented in Sections 4 through 6. All of the data used in the risk assessment have been fully validated and are assumed to represent current conditions. The data collected during site investigations were evaluated to determine reliability for use in the quantitative risk assessments. A review of the data and past discussions with USEPA and the Navy identified the following criteria for data usability and usage of qualified data:

- Data qualified with a J, K, or L (estimated) were treated as unqualified detected concentrations
- Data qualified with an R (rejected) were not used in the risk assessment
- Data qualified with a B (blank contamination) were used in the risk assessment as if the results were non-detects, with the blank-related concentrations of each constituent used as the sample detection limit
- For duplicate samples, the maximum concentration between the two samples was used as the sample concentration

Selection of COPCs

All of the detected constituents were screened following the procedures described below. The selection of COPCs was based on the criteria presented in the USEPA *Region 3 Technical Guidance Manual, Selection Exposure Routes and Contaminants of Concern by Risk-Based Screening.* (USEPA, 1993a) and RAGS Part D (USEPA, 2001a).

The maximum detected concentration of each constituent for each media and data grouping was compared to the criteria discussed below to select the COPCs. If the maximum concentration exceeded the criteria, the constituent was selected as a COPC. Constituents that were not detected in any of the samples or were detected at concentrations less than the criteria were not retained as COPCs. Detection limits for constituents that were not detected were also compared to the screening levels as discussed in Section 7.1.6, the uncertainty assessment. The COPC screening for each site is presented in Sections 7.2.1, 7.3.1, and 7.4.1.

- **Comparison with Health-Based Criteria for Surface Water:** Surface water data were compared to 10 times the USEPA tap water RSLs (USEPA, 2010a). This was done following USEPA Region 3 guidance because exposure to surface water is expected to be significantly less than exposure to groundwater and there are no screening levels for surface water. RSLs based on non-carcinogenic effects were divided by 10 to account for exposure to multiple constituents. RSLs based on carcinogenic effects were not adjusted. Therefore, RSLs based on non-carcinogenic effects were used as presented in the RSL table (10 times the tap water RSL divided by 10), and RSLs based on carcinogenic effects were multiplied by 10. Lead concentrations in surface water were compared to the federal action level for drinking water of 15 µg/L (USEPA, 2009).
- **Comparison with Health-Based Criteria for Sediment:** Sediment data were compared to 10 times the USEPA residential soil RSLs (USEPA, 2010a). This was done following USEPA Region 3 guidance because exposure to sediment is expected to be significantly less than exposure to soil, and there are no screening levels for sediment. RSLs based on

non-carcinogenic effects were divided by 10 to account for exposure to multiple constituents. RSLs based on carcinogenic effects were not adjusted. Therefore, RSLs based on non-carcinogenic effects were used as presented in the RSL table (10 times the residential soil RSL divided by 10), and RSLs based on carcinogenic effects were multiplied by 10.

- **Comparison with Health-Based Criteria for Groundwater:** Groundwater data were compared to the USEPA tap water RSLs (USEPA, 2010a). RSLs that are based on non-carcinogenic effects were divided by 10 to account for exposure to multiple constituents. RSLs based on carcinogenic effects were used as presented in the RSL table. Lead concentrations in groundwater were compared to the federal action level for drinking water of 15 μg/L (USEPA, 2009).
- **Comparison with Health-based Criteria for Indoor Air:** Groundwater data were compared with target groundwater concentrations calculated based on target indoor air concentrations to screen the groundwater data for the vapor intrusion from groundwater to indoor air pathway. Due to changes in toxicity value(s), the vapor intrusion screening levels (i.e., target groundwater concentration from Table 2c, *Subsurface Vapor Intrusion Guidance* [USEPA, 2002]) were updated using new toxicity data and the methodology presented in Appendix D of the Subsurface Vapor Intrusion Guidance. If the calculated target groundwater concentration is less than the maximum contaminant level (MCL) for the compound, the target concentration is set at the MCL (USEPA, 2009). This screening was performed only for volatile organic constituents detected in groundwater.
- **Essential Human Nutrients:** Constituents that are considered essential nutrients, present at low concentrations (i.e., only slightly elevated above naturally occurring levels), and toxic only at very high doses were eliminated from the quantitative risk analysis. These constituents are calcium, magnesium, potassium, and sodium. Although iron and manganese are also considered essential nutrients and are only toxic at very high doses, they were included in the HHRA because toxicity values are available.

A few of the constituents detected at the sites are not in the RSL table. Appropriate surrogate constituents were selected and their RSLs were used for the screening, as identified in the RAGS Part D (USEPA, 2001a) Table 2 series included in **Appendices G through I**.

7.1.3 Exposure Assessment

Exposure refers to the potential contact of an individual with a constituent. The exposure assessment identifies pathways and routes by which an individual may be exposed to the COPCs, and estimates the magnitude, frequency, and duration of potential exposure. Constituent intakes and associated health risks are only quantified for complete exposure pathways. The following sections discuss the components of exposure assessment:

- Development of the CSM for human health
- Calculation of exposure point concentrations
- Development of exposure assumptions for potentially complete exposure pathways
- Calculation of intake for COPCs

Conceptual Site Model for Human Health

This section provides the basis for developing the CSM for human exposures at Sites 8 and 34. **Figure 7-1** presents the CSM showing potential human health exposure scenarios identified for current and potential future site uses for Sites 8 and 34.

Physical Characteristics Sites 8 and 34 are located within WPNSTA Yorktown. WPNSTA Yorktown is located on the York-James Peninsula, which is an embayed portion of the Atlantic Coastal Plain physiographic province. Site 8 is an explosives contaminated wastewater discharge area. Site 34 is a discharge pipe which originates at Building 537 and extends south to Felgates Creek.

Site 8 is located in the east-central part of WPNSTA Yorktown (**Figures 2-1 and 4-1**). The site is located along the Eastern Branch of Felgates Creek, just downstream of Site 34 and about 1.5 miles from the confluence of the creek and the York River. The site is located off of Manley Road near Building 456 and consists of a 300-ft drainage way and its surrounding area. The eastern part of the site consists of a paved parking lot. The western part of the site around the drainage channel is wooded. Most of the site is relatively flat with the exception of the drainage channel itself, which is situated in a ravine with steeply sloping sides.

Site 34 is approximately 0.4 acres in size and is located in the north-central part of WPNSTA Yorktown (**Figures 2-1 and 5-1**). A one-lane asphalt road encircles Buildings 460, 459, 537, 458, and 651, which are concrete bunkers set into a hillside. South of the road, the sparsely wooded terrain slopes steeply to a flat marsh wetland area north of the main channel of the Eastern Branch of Felgates Creek .

Characterization of Land Use Currently, the mission of WPNSTA is to provide ordnance, technical support, and related services to sustain the war-fighting capability of the armed forces in support of national military strategy. Sites 8 and 34 are located in the same area of WPNSTA along the Eastern Branch of Felgates Creek and its unnamed tributary.

Sites 8 and 34 are within a restricted area of WPNSTA and are secured with locked wire gates. In addition, the sites are located inside an area encumbered by the explosive safety quantity distance (ESQD) and cannot be developed for real estate purposes. Currently industrial activities related to ordnance take place at Sites 8 and 34. Sites 8 and 34 are industrial in nature and are surrounded by woods.

Sites 8 and 34 are situated along the Eastern Branch of Felgates Creek and its unnamed tributary. Felgates Creek is a tidally influenced tributary to the York River. Groundwater flow from the sites is generally toward the creek. Surface water runoff from the sites are directed toward the creek and its tributaries. The positions of Sites 8 and 34 along the creek are illustrated on **Figure 2-1**. The constituents detected in the surface water (explosives and metals) and sediment (three VOCs which are common laboratory contaminants and metals) are not constituents that are typically considered to bioaccumulate in fish and crabs to levels of concern for humans who ingest these fish and crab, with the possible exception of mercury (if present as methyl mercury). Mercury was detected in the sediment, but was not detected in the surface water. Mercury was detected in four of the eight sediment samples at a maximum concentration of 0.16 µg/L. This concentration is not considered to be a concern for bioaccumulation in fish or crab tissue at levels that would pose a risk to potential human receptors who ingest the fish and crab. Additionally, the Eastern Branch of Felgates Creek

supports fishing only as a "catch and release" program (as part of Navy policy) and site-related concentrations in fish and crab downgradient of the site, where people are more likely to fish and crab and eat the fish and crabs they catch, would be lower.

Groundwater Use The predominant source of domestic water supply for WPNSTA Yorktown and surrounding communities is from the City of Newport News, Virginia, waterworks through a series of surface water reservoirs. Individual homes are able to obtain water from private wells installed into the Yorktown-Eastover shallow aquifer. However, because the groundwater at the base flows towards the York River and its tributaries, there is no potential for groundwater at WPNSTA Yorktown to migrate to these private wells. On WPNSTA Yorktown, there are no drinking water wells, and the shallow aquifer system is not used for any domestic water supply. There were four water supply wells on WPNSTA Yorktown; three have been abandoned and the fourth has been destroyed.

Potentially Exposed Populations Potentially exposed populations are identified based on their locations relative to the site, their activity patterns, and the presence of potential sensitive subpopulations. The potentially exposed populations evaluated by the risk assessment are shown on the CSM (**Figure 7-1**) and identified as appropriate for each site in Sections 7.2 through 7.4.

Exposure points are locations where humans could come in contact with contaminants released from the discharge areas to environmental media. Exposure points for Sites 8 and 34 include surface water and sediment in the Eastern Branch of Felgates Creek, and groundwater beneath and downgradient of Sites 8 and 34.

Current site use could allow for exposure to surface water and sediment. Potential receptors exposed to surface water and sediment (addressed together for both sites) are assumed to be current/future adult, adolescent, and child trespassers/visitors. In addition to exposure to surface water and sediment, current exposure to vapors that have migrated from groundwater into indoor air of on-site buildings (evaluated for Bunkers 459 and 537, and Building 456) by workers in the buildings may occur.

Potential future site use will likely stay the same as the current site use. However, for a conservative evaluation of potential risks, residential and industrial uses were evaluated in addition to the current site use scenarios because unrestricted land use is the desired goal for these sites. Groundwater would not be used as a future potable water supply by industrial workers because the Station already has a potable water supply. However, future industrial workers could be exposed to COPCs in indoor air from vapor intrusion from the shallow groundwater into a future building constructed on one of the sites.

Construction workers could be exposed to shallow groundwater during excavation activities. Additionally, it was conservatively assumed that groundwater from the Yorktown aquifer may be used as a potable water supply, although this is highly unlikely. Unfiltered groundwater samples were used to evaluate the construction worker scenario, and filtered groundwater samples were used to evaluate the residential exposure scenarios, following the USEPA Region III *Guidance on the Selection of Analytical Metal Results from Monitoring Well Samples for Use in Quantitative Assessment of Risk* (USEPA, 1992). It was also assumed that future residents could be exposed to COPCs in indoor air from vapor intrusion from the shallow groundwater into a residence.

It is also assumed that in addition to the current receptors for surface soil and sediment, construction workers could be exposed to surface water and sediment in the Eastern Branch of Felgates Creek.

In summary, the exposure routes for quantitative evaluation are:

Current/Future Trespasser/Visitor (Adult, Adolescent, and Child)—Ingestion of and dermal contact with surface water and sediment

- **Current/Future Industrial Worker—**Inhalation of indoor air (vapor intrusion from groundwater into site building)
- **Future Resident (Adult and Child)—**Ingestion of and dermal contact with shallow groundwater, inhalation of volatile COPCs from shallow water while showering (adult), and inhalation of indoor air (vapor intrusion from groundwater into future residential house)
- **Future Construction Worker—**Dermal contact with and inhalation of volatile emissions from shallow groundwater from an open excavation, ingestion of and dermal contact with surface water and sediment

Residential exposures to surface water and sediment were not evaluated by the risk assessment. It was assumed that the trespasser/visitor scenario would also be representative of future residents using surface water and sediment for recreational purposes.

Calculation of Exposure Point Concentrations

Exposure is quantified by estimating the exposure point concentrations (EPC) of COPCs in environmental media and constituent intake by the receptor. EPCs are estimated constituent concentrations that a receptor may contact and are specific to each exposure medium and site. EPCs may be directly monitored or estimated using environmental models. Constituent concentrations in groundwater, surface water, and sediment were measured for this assessment. Fate and transport modeling was used to estimate constituent concentrations in vapors from groundwater while showering and in vapors volatilized from groundwater in an open excavation. Additionally, indoor air concentrations from vapor intrusion from shallow groundwater into indoor air were modeled for currently occupied buildings on site, and potential future industrial and residential buildings. Volatilization while showering was estimated using the Foster and Chrostowski shower model (1987). Concentrations of VOCs in air resulting from volatilization of constituents in shallow groundwater in an open excavation were calculated using the Calculation of Inhalation Concentration in Excavation Trench methodology from the Virginia Voluntary Remediation Program (VRP). The Foster and Chrostowski shower model and the VRP model calculations are presented in **Appendices G and H**, Table 7 series. Indoor air concentrations resulting from vapor intrusion from shallow groundwater were estimated using the Johnson and Ettinger model. Building-specific information (e.g., dimensions), site-specific groundwater data (e.g., depth to groundwater, water temperature), and site-specific soils data collected during the RI investigation, along with standard default model parameters, were used in the Johnson and Ettinger model. The model inputs and summary of results in presented in the Table 11 series in **Appendices G and H**.

Both reasonable maximum exposure (RME) and central tendency exposure (CTE) EPCs were calculated for COPCs. The RME EPC for each of the COPCs was calculated as a 95 percent upper confidence limit (UCL) of the arithmetic mean of the data set, using ProUCL Version 4.1 (USEPA, 2010b). First, the distribution of each data set was determined (normal, lognormal, and/or gamma) by ProUCL using the Shapiro-Wilks test to test for a normal or lognormal distribution, and the Anderson-Darling and Kolmogorov-Smirnov Tests to test for a gamma distribution. Based on the distribution and skewness of the data points, ProUCL recommended a 95 percent UCL that was used as the RME EPC. In cases where there were less than five samples in the data set, or the recommended UCL exceeded the maximum detected concentration, the maximum concentration was used as the EPC.

For data sets with more than one detected concentration, the detected concentrations and non-detected values (detection limits) were entered into ProUCL and ProUCL calculated the EPCs using the "UCLs with NDs" method. For data sets with only one detected concentration, one-half the detection limits were entered into ProUCL as proxy values for non-detects and ProUCL calculated the statistics and EPCs using the "full method."

CTE risk evaluations were performed for exposure pathways that resulted in a risk above 1×10^{-4}, or a hazard index (HI) above 1.0 (see Section 7.1.5 on risk characterization). The arithmetic mean of the dataset based on the statistical method that was used to calculate the RME EPC was used as the CTE EPC regardless of distribution, except in cases where the data set consisted of one detected concentration. In this case, the arithmetic mean based on raw statistics from ProUCL output was used as the CTE EPC.

The EPCs for the COPCs for each medium at each site and the rationale for the selected EPC are presented in **Appendices G through I**, Table 3 series.

Estimation of Chemical Intakes for Individual Pathways

Chemical intake is the amount of the chemical constituent entering the receptor's body. The medium-specific and exposure scenario–specific intake equations used in this assessment are provided in the RAGS Part D (USEPA, 2001a) Table 4 series in **Appendices G through I**, for Sites 8 and 34, and surface water and sediment, respectively. The intake equation requires specific exposure parameters for each exposure pathway. Exposure parameters are often assumed values, and the magnitude influences the estimates of potential exposure (and risk). The reliability of the values chosen can also contribute to the uncertainty of the resulting risk estimates. Many of the exposure parameters have default values suggested by the USEPA, which were used for this assessment. These assumptions, based on estimates of body weights, media intake levels, and exposure frequencies and duration are provided by USEPA guidance (USEPA, 1989; 1991; 1997a; 2004). Other assumptions (e.g., exposure frequency for the trespasser/visitor exposure scenarios and construction workers) required consideration of location-specific information and were determined using professional judgment. The exposure factors used for different scenarios at the site are provided in the RAGS Part D (USEPA, 2001a) Table 4 series in **Appendices G through I**.

Although RAGS Part E (USEPA, 2004) recommends an exposure frequency of 250 days for the industrial worker (or construction worker) exposed to site media under the RME scenario, it is unlikely that a construction worker would be exposed to groundwater in an excavation for longer than 125 days. It is also likely that any groundwater that is present in an excavation would be pumped from the excavation while performing construction

activities. Therefore, an exposure frequency of 125 days per year was selected to evaluate construction worker exposure to ground water. Additionally, it is unlikely that a construction worker would be exposed to surface water and sediment every day they work at the site. Therefore, it was assumed that a construction worker may be exposed to surface water and sediment 10 days per year while performing maintenance or construction work within the Eastern Branch of Felgates Creek and its unnamed tributary.

Sediment was treated as soil to estimate exposure via dermal contact. Two additional parameters are necessary to estimate dermal contact with soil or sediment. The first parameter, the dermal absorption fraction, estimates the amount of a constituent in soil or sediment that would be absorbed by the skin. The USEPA (2004) guidance for absorption fractions was used, which recommends 3 percent for arsenic, the only COPC for sediment. The value is an estimate based on available experimental data for dermal absorption from contaminated soil. The actual amount absorbed is dependent on soil characteristics. The second additional parameter necessary to estimate dermal expose to constituents in sediment is the sediment (soil) to skin adherence factor (AF). The AF estimates the amount of sediment that adheres to the skin per unit of surface area. The AFs used in this assessment were obtained from USEPA guidance (2004) and are included in the RAGS Part D (USEPA, 2001a) Table 4 series in **Appendices G through I**. The AFs for reed gatherers were used, as the reed gatherers are assumed to be exposed to wet soil or muddy conditions, which is more representative of exposure to sediment, than a drier soil exposure.

The dermal exposure model presented in USEPA's dermal exposure assessment guidance (USEPA, 2004) was used to estimate dermal exposure to groundwater and surface water. The values for parameters used in this model (i.e., permeability constant) were obtained from this guidance document and are included in the RAGS Part D (USEPA, 2001a) Table 4 and 7 series in **Appendices G through I**.

7.1.4 Toxicity Assessment

Toxicity assessment defines the relationship between the magnitude of exposure and possible severity of adverse effects, and weighs the quality of available toxicological evidence. Toxicity assessment generally consists of two steps: hazard identification and dose-response assessment. Hazard identification is the process of determining the potential adverse effects from exposure to the chemical along with the type of health effect involved. Dose-response assessment is the process of quantitatively evaluating the toxicity information and characterizing the relationship between the dose of the constituent administered or received and the incidence of adverse health effects in the exposed population.

Health effects are divided into two broad groups: non-carcinogenic and carcinogenic effects. This division is based on the different mechanisms of action currently associated with each category. This section discusses non-carcinogenic and carcinogenic effects separately, and how these effects were assessed in this HHRA.

The primary source of toxicity values is the USEPA's Integrated Risk Information System (IRIS) database (USEPA, 2011), which contains up-to-date toxicological information. IRIS includes only reference doses (RfDs), inhalation reference concentrations (RfCs), carcinogenic slope factors (CSFs), and inhalation unit risk factors (IURs) that have been verified by USEPA workgroups. In accordance with the USEPA *Human Health Toxicity Values in Superfund Risk Assessments* guidance (2003a), the second tier of toxicity factors is

the Provisional Peer Reviewed Toxicity Value (PPRTV) database maintained by the USEPA's National Center for Environmental Assessment (NCEA) and the Superfund Health Risk Technical Support Center. Toxicity values from the PPRTV were used if values were not available from IRIS. The Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997c), which are issued by USEPA's Office of Research and Development, and California USEPA toxicological database were consulted when data were not available in IRIS or PPRTV. The use of toxicity values from sources other than IRIS in an HHRA increases the uncertainty of the quantitative risk.

Toxicity Information for Non-carcinogenic Effects

Non-carcinogenic health effects include a variety of toxic effects on body systems, ranging from toxicity to the kidneys to central nervous system disorders. The toxicity of a chemical is assessed through a review of toxic effects noted in short-term (acute) animal studies, long-term (chronic) animal studies, and epidemiological investigations.

USEPA (1989) defines the chronic RfD or RfC as a dose that is likely to be without appreciable risk of deleterious effects during a lifetime of exposure. Chronic RfDs and RfCs are specifically developed to be protective for long-term exposure to a compound (for example, 7 years to a lifetime), and consider uncertainty in the toxicological database and sensitive receptors. Subchronic RfDs and RfCs (applicable for exposures less than 7 years), which are all provisional values (i.e., not verified by USEPA), were used for the construction worker scenario. If a Subchronic RfD or RfC was not available for a COPC, the chronic RfD or RfC was used.

In the development of RfDs and RfCs, all available studies examining the toxicity of a chemical following exposure are considered on the basis of scientific merit. The lowest dose level at which an observed toxic effect occurs is identified as the Lowest Observed Adverse Effect Level (LOAEL), and the dose at which no effect is observed is identified as the No Observed Adverse Effect Level (NOAEL). Several uncertainty factors (UFs) may be applied to the LOAEL or NOAEL in deriving the RfDs and RfCs, to account for uncertainties such as poor data quality, extrapolation of data from animal studies to human exposures, or the use of subchronic studies to develop chronic criteria. These UFs range from 10 to 10,000, and are based on professional judgment. Consequently, there are varying degrees of uncertainty in the toxicity criteria.

USEPA-derived oral RfDs and inhalation RfCs, and associated UF and modifying factor (MF) values, available for the COPCs at each site are presented in **Appendices G through I**.

Per USEPA guidance, oral RfDs were adjusted from administered dose (oral) to absorbed dose (dermal) to evaluate dermal toxicity. When appropriate, the RfDs were adjusted by multiplying by the oral absorption factors (USEPA, 2004). This adjustment is shown in the RAGS Part D (USEPA, 2001a) Table 5.1 tables in **Appendices G through I**.

Toxicity Information for Carcinogenic Effects

Potential carcinogenic effects are quantified as CSFs or IURs that convert estimated exposures directly to incremental lifetime carcinogenic risks.

CSFs and IURs may be derived from the results of chronic animal bioassays, human epidemiological studies, or both. Animal bioassays are usually conducted at dose levels that

are much higher than are likely to be encountered in the environment. This design detects possible adverse effects in the relatively small test populations used in the studies. The actual risks from exposure to a potential carcinogen are not likely to exceed the estimated risks and are probably much lower or even zero. USEPA-derived CSFs and IURs are presented in **Appendices G through I**.

As was done for oral RfDs, oral CSFs were adjusted from administered dose (oral) to absorbed dose (dermal) to evaluate dermal toxicity. When appropriate, the CSFs were adjusted by dividing by the oral absorption factors (USEPA, 2004). This adjustment is shown in the RAGS Part D Table 6.1 tables in **Appendices G through I**.

Constituents for Which USEPA Toxicity Values Are Not Available

Most of the constituents detected at Sites 8 and 34 have toxicity factors and USEPA RSLs. Detected constituents that did not have RSLs were compared to RSLs for appropriate surrogate constituents during the COPC selection process. Surrogates were selected based on previous recommendations from USEPA Region 3. The surrogates are identified in the RAGS (USEPA, 2004) Table 2 series.

7.1.5 Risk Characterization

Risk characterization combines the results of the previous elements of the risk assessment to evaluate the potential health risks associated with exposure to the COPCs. The risk characterization is then used as an integral component in remedial decision making and selection of potential remedies or actions, as necessary.

Methods for Estimating Risks

Potential human health risks are discussed independently for carcinogenic and non-carcinogenic constituents because of the different toxicological endpoints, relevant exposure duration, and methods used to characterize risk. Exposure to some constituents may result in both non-carcinogenic and carcinogenic effects (i.e., arsenic), and therefore, these constituents were evaluated in both groups.

Non-carcinogenic Hazard Estimation Non-carcinogenic health risks are estimated by comparing the calculated exposures (intakes) to RfDs (or RfCs). The calculated intake divided by the RfD (or exposure concentration divided by the RfC) is equal to the hazard quotient (HQ):

$$HQ = Intake / RfD \text{ or } Exposure\ Concentration / RfC$$

The intake and RfD (or exposure concentration and RfC) represent the same exposure route (i.e., oral intakes are divided by oral RfDs, inhalation exposure concentrations are divided by inhalation RfCs). An HQ that exceeds 1 (i.e., intake exceeds the RfD) indicates that there is a potential for adverse health effects associated with exposure to that constituent.

To assess the potential for non-carcinogenic health effects posed by exposure to multiple constituents, an HI approach is used (USEPA, 1986). This approach assumes that non-carcinogenic hazards associated with exposure to more than one constituent are additive (HI = sum of the HQs). Synergistic or antagonistic interactions between constituents are not considered. The HI may exceed 1 even if all of the individual HQs are less than 1. HIs may be added across exposure routes to estimate the total non-carcinogenic health effects to a

receptor posed by exposure through multiple routes. An HI greater than 1 indicates that there is some potential for adverse non-carcinogenic health effects associated with exposure to the COPCs, possibly warranting remedial action. If the HI is greater than 1, separate HIs are calculated for each target organ to determine if the HI for a specific target organ is greater than 1. If the HI for each target organ does not exceed 1, it can be assumed that there is no non-carcinogenic hazard to the receptor above USEPA's acceptable level.

Carcinogenic Risk Estimation The potential for carcinogenic effects due to exposure to site-related constituents is evaluated by estimating the excess lifetime carcinogenic risk (ELCR). ELCR is the incremental increase in the probability of developing cancer during one's lifetime in addition to the background probability of developing cancer.

Carcinogenic risk is calculated by multiplying the intake by the CSF (or exposure concentration by the IUR).

$$ELCR = Intake \times CSF \text{ or } Exposure\ Concentration \times IUR$$

The combined risk from exposure to multiple constituents was evaluated by adding the risks from individual constituents. Risks were also added across the exposure routes if an individual would be exposed through multiple routes.

When a cumulative carcinogenic risk to an individual receptor under the assumed RME exposure conditions at the site exceeds 100 in a million (i.e., 10^{-4} excess carcinogenic risk), CERCLA generally requires remedial action to reduce risks at the site (USEPA, 1991). If the cumulative risk is less than 10^{-4}, action generally is not required, but may be warranted if a chemical-specific standard (for example, MCL) is exceeded. A risk-based remedial decision could be superseded by the presence of non-carcinogenic impact or environmental impact requiring action at the site.

The results of the risk characterization are presented for each site in Sections 7.2 through 7.4.

7.1.6 Uncertainty Associated with Human Health Assessment

The risk measures used in CERCLA site risk assessments are not fully probabilistic estimates of risk, but are conditional estimates given that a set of assumptions about exposure and toxicity are realized. Thus it is important to specify the assumptions and uncertainties inherent in the risk assessment to place the risk estimates in proper perspective. The general uncertainties common to both of the sites are presented below. Specific uncertainties for each of the sites are presented in Sections 7.2 through 7.4.

General Uncertainty in COPC Selection

A comparison of site concentrations to background concentrations was not used to select the COPCs in accordance with USEPA Region 3 guidance. Following the USEPA approach may result in the inclusion of risks that may be associated with background conditions and are not necessarily site-related.

The method used to screen groundwater data for vapor intrusion into indoor building air was very conservative. It most likely results in a greater number of chemicals selected as COPCs than would actually be a concern for the vapor intrusion exposure pathway. Included in the conservatism is use of maximum detected concentrations from across the

site, when it is likely a building would not be built across the full site. Additionally, the screening values used to select the COPCs are based on conservative assumptions.

The detection limits for non-detected constituents were compared with the RSLs to determine if detection limits were above the RSLs and constituents that were not detected could be present at the site at concentrations below the detection limit but above the RSL (Table 12 series in Appendices G, H, and I). The comparison indicated that there were a few non-detected VOCs, SVOCs, PCBs, explosives, and metals with detection limits above adjusted RSLs. However, the majority of these detection limits were below the non-adjusted RSLs for noncarcinogens, and within ten times (10^{-5} to 10^{-6} risk level) or 100 times (10^{-4} to 10^{-5} risk level) the RSL for carcinogens. This comparison indicates that there may be additional constituents present at the site at concentrations below the detection limits but slightly above the screening levels used to identify the COPCs (the adjusted RSLs). This may result in an under-estimation of risks. However, based on the past site use, it is likely that many of these constituents are not present at the site, and if they are present, the concentrations would be below the detection limits and not at levels of significant concern to human health.

Uncertainty Associated with Exposure Assessment

Uncertainty in the exposure assessment was generally treated with conservative decision rules and assumptions, and therefore the uncertainty likely overestimates actual exposure to COPCs. Several exposure pathways evaluated by this HHRA, such as residential land use, are hypothetical and are not anticipated to occur in the future at Sites 8 and 34. Most of the exposure factors used for quantitation of exposure are generally conservative and reflect worst-case, or upper-bound, assumptions for the exposure.

To conservatively evaluate unrestricted land use, it was assumed that the site may be used for residential purposes in the future, though this is not a likely scenario. It is also not likely that groundwater from the shallow aquifer would ever be used as a potable or industrial water supply because of the availability of better water supplies with respect to both water quality and quantity.

The percent of a constituent absorbed through the skin is likely to be affected by many parameters, including soil loading, moisture content, organic content, pH, and presence of other constituents. The availability of a constituent for absorption through the skin depends on site-specific fate and transport properties of the chemical species available for eventual absorption. Constituent concentrations, specific properties of the constituent, and the kinetics of constituents being released from sediment all affect the amount of a constituent that is absorbed. These factors contribute to the uncertainty associated with dermal absorption estimates, and make it difficult to quantify the amount of certain constituents absorbed through the skin from soil, and even more for sediment.

The estimation of vapor intrusion from groundwater to indoor air used conservative, default parameter value assumptions in the Johnson and Ettinger model, which may result in the overestimation of indoor air concentrations. The use of this model, and the conservative assumptions, results in an overestimation of the risks and hazards associated with this pathway for both the current/future industrial worker and future resident.

The Johnson and Ettinger model incorporates the following conceptual assumptions/ limitations:

- No free phase liquid/precipitate (e.g., non-aqueous-phase liquid or solid) is present.
- Contaminant vapors enter the structure primarily through cracks and openings in the walls and foundation.
- Convective transport occurs primarily within the building zone of influence and vapor velocities decrease rapidly with increasing distance from the structure.
- Diffusion dominates vapor transport between the source of contamination and the building zone of influence.
- All vapors originating from below the building will enter the building unless the floors and walls are perfect vapor barriers.
- All soil properties in stratum are homogeneous.
- The contaminant is homogeneously distributed within the zone of contamination.
- The aerial extent of contamination is greater than that of the building floor in contact with the soil.
- Vapor transport occurs in the absence of convective water movement within the soil column (i.e., evaporation or infiltration), and in the absence of mechanical dispersion.
- The model does not account for transformation processes (e.g., biodegradation, hydrolysis)
- The soil layer in contact with the structure floor and walls is isotropic with respect to permeability.
- Both the building ventilation rate and the difference in dynamic pre pressure between the interior of the structure and the soil surface are constant values.

Uncertainty Associated with Toxicity Assessment

Uncertainty associated with the non-carcinogenic toxicity factors is included in the toxicity tables for each site (**Appendices G through I**, Table 5s and 6s). Several UFs were applied to extrapolate dose points from animal studies to humans. These UFs range between 1 and 3,000. Additional modification factors are used on the basis of USEPA's professional judgment. Therefore, there is a high degree of uncertainty in the non-carcinogenic toxicity criteria based on the available scientific data for each constituent. The non-carcinogenic toxicity factors are most likely an overestimate of actual toxicity.

Use of provisional or withdrawn toxicity factors increases the uncertainty of the quantitative hazard and risk estimates. These provisional values were used to provide a quantitative estimate rather than a merely qualitative risk discussion; however, these values should be interpreted cautiously because USEPA has not approved these toxicity values.

CSFs and IURs developed by USEPA represent upper-bound estimates. Carcinogenic risks generated in this assessment should be regarded as an upper-bound estimate of the potential

carcinogenic risks rather than an accurate representation of carcinogenic risk. The true carcinogenic risk is likely to be less than the predicted value (USEPA, 1989).

Additional uncertainty lies in the prediction of relative sensitivities of different species of animals and the applicability of animal data to humans.

A large degree of uncertainty is associated with the oral-to-dermal adjustment factors (based on constituent-specific gastrointestinal absorption factors) used to transform the oral RfDs based on administered doses to dermal RfDs based on absorbed doses. It is not known if the adjustment factor results in an underestimate or overestimate of the actual toxicity associated with dermal exposure.

Uncertainty in Risk Characterization

The uncertainties identified in each component of risk assessment ultimately contribute to uncertainty in risk characterization. The addition of risks and HIs across pathways and constituents contributes to uncertainty based on chemical interactions such as additivity, synergism, potentiation, and susceptibility of exposed receptors.

7.2 Site 8 Human Health Risk Assessment

This section presents the HHRA for Site 8 groundwater. Selection of COPCs, calculation of EPCs, risk characterization (risk estimates), discussion of the site-specific uncertainties in the HHRA, and the HHRA summary are presented below. Methodologies followed for the HHRA are presented in Section 7.1.

7.2.1 Identification of COPCs for Site 8

This subsection includes a summary of the groundwater data evaluated by the HHRA and presents the COPCs selected for further evaluation. A discussion of the site investigations and data collected at Site 8 are presented in Section 4.

Data Summary

Data were evaluated by the quantitative risk assessment to characterize potential current and future risks based on current site conditions. All of the data used in the risk assessment were fully validated and are assumed to represent current conditions. Table 7-1 lists the groundwater samples that were evaluated for the HHRA. Unfiltered groundwater data were used to evaluate construction worker exposure to groundwater. Filtered groundwater inorganic data were used to evaluate residential exposure to groundwater since an order of magnitude difference was noted between the filtered and unfiltered result signifying a higher amount of particulates in the water column (USEPA, 1992) as shown in Appendix D, Final Groundwater Raw Analytical Results 2007-2008.

Summary of COPCs

Appendix G, Tables 2.1 through 2.5, present the screening to identify the COPCs for Site 8 groundwater. **Table 7-2** summarizes the constituents that were selected as COPCs based on comparison to tap water RSLs and vapor intrusion from groundwater to indoor air screening values. Four VOCs, one SVOC, five explosives, three dissolved metals (residential scenario), and seven total metals (construction worker scenario) were identified as COPCs

for groundwater. One of the VOCs retained as a COPC in groundwater was also identified as a COPC for the vapor intrusion from groundwater to indoor air inhalation pathway.

7.2.2 Exposure Assessment for Site 8

A general discussion of exposure assessment is included in Section 7.1.3. The CSM for human health is presented in **Figure 7-1**. Site 8 is a 300-ft drainage way located along the Eastern Branch of Felgates Creek, approximately 1.5 miles from the confluence of the creek and the York River. The drainage area lies east of the NEDED complex (Building 456). The topography is flat around Building 456, but slopes steeply into the drainage way. The ground surface is paved with the exception of the western and northern portions of the site which are wooded. Shallow (Yorktown-Eastover aquifer) groundwater at the site is encountered at approximately 6 ft bgs with flow towards Felgates Creek.

The Site 8 drainage way received wastewater from the NEDED complex from 1940 to 1975. The wastewater reportedly contained unspecified solvents, spent/neutralized acids, and nitramine compounds. In 1974, a carbon adsorption tower was installed to treat the contaminated wastewater prior to discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer serviced by HRSD. Since 1986, the site has reverted to a natural drainage area.

Appendix G, Table 1, and **Table 7-3** summarize the potentially exposed populations evaluated by this risk assessment. It is assumed a current/future industrial worker could be exposed to vapors migrating from groundwater into indoor air

In summary, the current land use exposure route for quantitative evaluation for Site 8 groundwater is:

- **Industrial Worker—**Inhalation of indoor air (vapor intrusion from shallow groundwater into current site building indoor air).

Although future site use is expected to remain the same as current site use, unrestricted land use was evaluated, along with potential industrial site use. Therefore, both industrial and residential uses were evaluated. For future land use conditions, it was conservatively assumed that groundwater from the Yorktown aquifer might be used as a potable water supply, although this is highly unlikely. It was also assumed future construction workers could be exposed to groundwater during excavation activities.

To summarize, future exposure routes include the current exposure routes and the following:

- **Resident (Adult and Child)—**Ingestion of and dermal contact with shallow groundwater, inhalation of volatile COPCs from shallow groundwater while showering (adult only), and inhalation of indoor air (vapor intrusion from shallow groundwater into future site building indoor air)
- **Construction Worker—**Dermal contact with shallow groundwater and inhalation of volatile emissions from shallow groundwater in an open excavation
- **Industrial Worker—**Inhalation of indoor air (vapor intrusion from shallow groundwater into future site building indoor air).

Calculation of EPCs

The approach used to calculate EPCs is presented in Section 7.1.3.

Vapor intrusion into indoor air was estimated using the Johnson and Ettinger model for a current/future industrial building on site and a future residential house on site. The input parameters used for this model are listed in **Tables 7-4 and 7-5** for the industrial and residential scenarios, respectively. The maximum detected concentration of the COPC was conservatively used as the input groundwater concentration, no matter where it was detected on the site. The output from this model is included **Appendix G**, Tables 11.2 and 11.3.

Appendix G presents the RME EPCs (Tables 3.1.RME through 3.6.RME) and CTE EPCs (Tables 3.1.CTE through 3.4.CTE) for the groundwater COPCs.

Estimation of Chemical Intakes for Individual Pathways

The media-specific and exposure scenario–specific intake equations and exposure parameter values used in this assessment are provided in **Appendix G**, Tables 4.1.RME through 4.3.RME and 4.1.CTE through 4.3.CTE.

7.2.3 Toxicity Assessment for Site 8

A discussion of toxicity assessment is provided in Section 7.1.4. USEPA-derived oral RfDs, inhalation RfCs, and associated uncertainty factors and modifying factor values, for the groundwater COPCs at Site 8 are listed in Tables 5.1 and 5.2 in **Appendix G**. USEPA-derived CSFs and IURs are listed in Tables 6.1 and 6.2 in **Appendix G**, respectively.

7.2.4 Risk Characterization for Site 8

The results of the risk characterization are presented below by receptor. The risk calculations are presented in **Appendix G**, Tables 7.1.RME through 7.5.RME, and 7.1.CTE through 7.3.CTE. A summary of the RME results is presented in **Table 7-6** and **Appendix G**, Tables 9.1.RME through 9.5.RME, and a summary of the CTE results is shown in **Table 7-7** and **Appendix B**, Tables 9.1.CTE through 9.3.CTE. CTE risks were calculated only when the RME hazards exceeded one or the RME carcinogenic risks exceeded 10^{-4}.

Current/Future Industrial Worker, Table 9.1.RME, Appendix G

The risk assessment assumes that a current/future industrial worker could be exposed to shallow groundwater through inhalation of vapors that have migrated from groundwater to indoor air through vapor intrusion. The RME noncarcinogenic hazard associated with inhalation of indoor air (HI = 0.00004) is less than the acceptable HI of 1.0. The RME carcinogenic risk (2.2×10^{-8}) is less than the acceptable risk range of 1×10^{-6} to 1×10^{-4}.

Future Adult Resident (Non-carcinogenic Hazard), Tables 9.2.RME and 9.1.CTE, Appendix G

The risk assessment assumed that a future adult resident could be exposed to groundwater through ingestion, dermal contact and inhalation while showering, and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion. Carcinogenic risks were not calculated for an adult resident but were calculated for a lifetime child/adult resident, following USEPA guidance. The RME non-carcinogenic hazard associated with exposure to groundwater (HI = 7.1) is above the acceptable HI of 1.0. The hazard is primarily associated with ingestion of 2, 4, 6-trinitrotoluene (HQ = 3.0), 2-

amino-4,6-dinitrotoluene (HQ = 1.0), and 4-amino-2,6-dinitrotoluene (HQ = 1.1). The CTE non-carcinogenic hazard (HQ = 0.6) is less than the acceptable HI of 1.0.

Future Child Resident (Non-carcinogenic Hazard), Tables 9.3.RME and 9.2.CTE, Appendix G

The risk assessment assumed that a future child resident could be exposed to groundwater through ingestion, dermal contact and inhalation while showering, and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion. Carcinogenic risks were not calculated for a child resident but were calculated for a lifetime child/adult resident, following USEPA guidance.

The RME non-carcinogenic hazard associated with exposure to groundwater (HI = 17) exceeds the acceptable HI of 1.0. The hazard is primarily associated with ingestion of 2,4,6-trinitrotoluene (HQ = 7.0), 2-amino-4,6-dinitrotoluene (HQ = 2.3), 4-amino-2,6-dinitrotoluene (HQ = 2.6), and RDX (HQ = 2.2). The CTE non-carcinogenic hazard (HQ = 1.9) also exceeds the acceptable HI of 1.0, however no target organ specific HIs exceed 1.0.

Future Lifetime Resident (Carcinogenic Risk), Tables 9.4.RME and 9.3.CTE, Appendix G

The risk assessment assumes that a lifetime child/adult resident could be exposed to groundwater through ingestion, dermal contact and inhalation while showering, and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion.

The RME carcinogenic risk associated with exposure to groundwater (CR = 5.6×10^{-4}) is above USEPA's target risk range of 10^{-6} to 10^{-4}. The risk is primarily associated with ingestion of RDX (CR = 1.7×10^{-4}), ingestion and dermal contact with tetrachloroethene (CR = 7.5×10^{-5}), and ingestion of chromium (CR = $2.3\text{x}10^{-4}$). The CTE carcinogenic risk associated with exposure to groundwater (6.6×10^{-5}) is within USEPA's target risk range.

Future Construction Worker, Tables 9.5.RME, Appendix G

The risk assessment assumes that a future construction worker could be exposed to groundwater through dermal contact and inhalation of volatiles.

The RME non-carcinogenic hazard associated with exposure to groundwater (HI = 0.21 is less than the acceptable HI of 1.0. The RME carcinogenic risk (7.7×10^{-7}) is below the acceptable risk range of 10^{-6} to 10^{-4}.

7.2.5 Uncertainty Associated with Site 8 HHRA

The general uncertainties associated with the HHRA are discussed in Section 7.1.6. Below is a discussion of the uncertainties specific to the evaluation of risks associated with the groundwater at Site 8.

3-5-Dinitroaniline was identified as a COPC for Site 8 groundwater using the RSL for 1,3-dinitrobenzene, which was used as a surrogate since there are no toxicity values (or RSLs) available for 3,5-dinitroaniline. Since there are no toxicity values available for 3,5-dinitroaniline, risks associated with 3,5-dinitroaniline were not quantified in the HHRA. Therefore, the risks associated with exposure to Site 8 groundwater may be slightly underestimated, however, 3,5-dinitroaniline was only detected in two of the nine groundwater samples, and both detected concentrations were J flagged, indicating they are estimated values.

The calculated hazards and risks to the future residents from exposure to groundwater were above acceptable levels. One of the risk drivers (PCE) was detected in just 1 of 9 samples. 2,4,6-Trinitrotoluene, 4-amino-2,6-and 2-amino-4,6-dinitrotoluene were each just detected at concentrations exceeding the screening value in one sample, the sample from YS08-GW08. RDX was detected in five of the nine samples, and four of the detected concentrations exceeded the screening value. Chromium was detected in eight of the nine samples and all detected concentrations exceeded the screening level. However, in the absence of chromium speciation information for the groundwater samples, the tap water RSL for hexavalent chromium, the more toxic form of chromium, was used as the screening value to identify total chromium as a COPC and the toxicity factors for hexavalent chromium were used to estimate the risks associated with total chromium. The use of hexavalent chromium for evaluation of total chromium is extremely conservative since the presence of trivalent chromium is strongly favored in natural waters because the concentrations of constituents known to reduce hexavalent chromium to trivalent chromium generally far outweigh the concentrations of the few constituents known to oxidize trivalent chromium to hexavalent chromium. Furthermore, once reduced, trivalent chromium is very stable in aquatic environments and highly unlikely to oxidize to hexavalent chromium. Thus, chromium in groundwater is more likely to be in its trivalent form than its hexavalent form (Fendorf and Zasoski, 1992; Milacic and Stupar, 1995; Weaver and Hochella, 2003). The concentrations of total chromium detected in the groundwater are below the tap water RSL for trivalent chromium.

The maximum detected concentrations of all of the risk drivers, with the exception of chromium, were detected in YS08-GW08, and for all but PCE and RDX, this maximum detected concentration was used as the RME EPC.

The future residential scenario evaluated in the risk assessment is very conservative. It is unlikely that the site will be used for future residential development, and even more unlikely that the groundwater would be used as a future potable water supply.

7.2.6 Site 8 Human Health Risk Summary

The HHRA was conducted to evaluate the potential human health risks associated with groundwater at Site 8. This baseline risk assessment was conducted to characterize potential current and future human health risks on the basis of potential and unlikely (but conservative) receptor populations and exposure scenarios if no remedial action is implemented.

Appendix G, Tables 9.1.RME through 9.5.RME and Tables 9.1.CTE through 9.3.CTE summarize the RME and CTE potential hazards and risks to each receptor as described in Section 7.2.4. **Appendix G**, Tables 10.1.RME through 10.3.RME and 10.1.CTE show the receptor scenarios with a total HI greater than 1.0 or total carcinogenic risks greater than 10^{-4}. Constituents that contribute HIs greater than 0.1 or carcinogenic risks greater than 10^{-6} (the chemicals of concern for any future additional evaluation) are included in the table.

The RME noncarcinogenic hazard and RME carcinogenic risk to the industrial worker associated with vapor intrusion into indoor air, and the RME noncarcinogenic hazard and RME carcinogenic risk to the construction worker exposed to groundwater in an open excavation are less than USEPA's target levels. The RME noncarcinogenic hazard to the child and the adult resident, and the RME carcinogenic risk to the lifetime resident

associated with use of the groundwater exceeds USEPA's target levels. The noncarcinogenic hazards and the carcinogenic risk are primarily associated with explosives and chromium. The CTE noncarcinogenic hazard to the child resident is above USEPA target levels., however none of the target organ specific hazards exceed the target level. One of the risk contributors (tetrachloroethene) was detected in just 1 of 9 samples. 2,4,6-trinitrotoluene, 4-amino-2,6-and -4,6-dinitrotoluene were each just detected at concentrations exceeding the screening value in one sample, the sample from GW08. RDX was detected in five of the nine samples, and four of the detected concentrations exceeded the screening value. Chromium was detected in eight of the nine samples and all detected concentrations exceeded the screening level. However, the toxicity factors hexavalent chromium were used to estimate the risks associated with total chromium. It is more likely the chromium is present in the trivalent form, and if so, there would be no unacceptable risks associated with exposure to the chromium. The maximum detected concentrations of all of the risk drivers (except for chromium) were detected in YS08-GW08, and for all but PCE and RDX, the maximum detected concentration was used as the RME EPC.

The future residential land use scenario evaluated in this assessment is very conservative because it is assumed that land use will change to residential in the future.

7.3 Site 34 Human Health Risk Assessment

This section presents the HHRA for Site 34 groundwater. Selection of COPCs, calculation of EPCs, risk characterization (risk estimates), discussion of the site-specific uncertainties in the HHRA, and the HHRA summary are presented below. Methodologies followed for the HHRA are presented in Section 7.1.

7.3.1 Identification of COPCs for Site 34

This subsection includes a summary of the groundwater data evaluated by the HHRA and presents the COPCs selected for further evaluation. A discussion of the site investigations and data collected at Site 34 are presented in Section 5.

Data Summary

Data were evaluated by the quantitative risk assessment to characterize potential current and future risks based on current site conditions. All of the data used in the risk assessment were fully validated and are assumed to represent current conditions. **Table 7-8** lists the groundwater samples that were evaluated for the HHRA. Unfiltered groundwater data were used to evaluate construction worker exposure to groundwater. Filtered groundwater inorganic data were used to evaluate residential exposure to groundwater since an order of magnitude difference was noted between the filtered and unfiltered result (USEPA, 1992) as shown in Appendix D, Final Groundwater Raw Analytical Results 2007-2008.

Summary of COPCs

Appendix H, Tables 2.1 through 2.5, present the screening to identify the COPCs for Site 34 groundwater. **Table 7-9** summarizes the constituents that were selected as COPCs based on comparison to tap water RSLs and vapor intrusion from groundwater to indoor air screening values. Seven VOCs, two explosives (one of which is volatile), two dissolved metals (residential scenario), and nine total metals (construction worker scenario) were identified as COPCs for groundwater. Four VOCs retained as COPCs in groundwater were

also identified as COPCs for the vapor intrusion from groundwater to indoor air inhalation pathway.

7.3.2 Exposure Assessment for Site 34

A general discussion of exposure assessment is included in Section 7.1.3. The CSM for human health is presented in **Figure 7-1**. Site 34, The Building 537 Discharge to Felgates Creek, is approximately 0.4 acres in the north-central portion of WPNSTA Yorktown. A one-lane asphalt road circles around Buildings 458, 459, 460, 537, and 651, which are concrete bunkers set into a hillside. South of the road, the sparsely wooded terrain slopes steeply to a flat marsh wetland area north of the main channel of the Eastern Branch of Felgates Creek. Site 34 consists of a pipe which originates at Building 537 and extends south to Felgates Creek. Nitramine contaminated wastewater was reportedly discharged through the pipe. Groundwater and surface water flow south toward the Eastern Branch of Felgates Creek.

Appendix H, Table 1 and **Table 7-10** summarize the potentially exposed populations evaluated by this risk assessment. It is assumed a current/future industrial worker could be exposed to vapors migrating from groundwater into indoor air.

In summary, the current land use exposure routes for quantitative evaluation for Site 34 groundwater are:

- **Industrial Worker—**Inhalation of indoor air (vapor intrusion from shallow groundwater into current site building indoor air).

Although future site use is expected to remain the same as current site use, unrestricted land use was evaluated, along with potential industrial site use. Therefore, both industrial and residential uses were evaluated. For future land use conditions, it was conservatively assumed that groundwater from the Yorktown aquifer might be used as a potable water supply, although this is highly unlikely. It was also assumed future construction workers could be exposed to groundwater during excavation activities.

To summarize, future exposure routes include the current exposure routes and the following:

- **Resident (Adult and Child)—**Ingestion of and dermal contact with shallow groundwater, inhalation of volatile COPCs from shallow groundwater while showering (adult only), and inhalation of indoor air (vapor intrusion from shallow groundwater into future site building indoor air)
- **Construction Worker—**Dermal contact with shallow groundwater and inhalation of volatile emissions from shallow groundwater in an open excavation
- **Industrial Worker—**Inhalation of indoor air (vapor intrusion from shallow groundwater into future site building indoor air).

Calculation of EPCs

The approach used to calculate EPCs is presented in Section 7.1.3.

Vapor intrusion into indoor air was estimated using the Johnson and Ettinger model for a current/future industrial building on site and a future residential house on site. The input parameters used for this model are listed in **Tables 7-11** and **7-12** for the industrial and

residential scenarios, respectively. The maximum detected concentrations of the volatile COPCs were conservatively used as the input groundwater concentrations, no matter where they were detected on the site. The output from this model for the VOCs detected in groundwater is included **Appendix H,** Tables 11.2 and 11.3.

Appendix H presents the RME EPCs (Tables 3.1.RME through 3.6.RME) and CTE EPCs (Tables 3.1.CTE through 3.4.CTE) for the groundwater COPCs.

Estimation of Chemical Intakes for Individual Pathways

The media-specific and exposure scenario–specific intake equations and exposure parameter values used for Site 34 are provided in **Appendix H**, Tables 4.1.RME through 4.3.RME and Tables 4.1.CTE trough 4.3.CTE.

7.3.3 Toxicity Assessment for Site 34

A discussion of toxicity assessment is provided in Section 7.1.4. USEPA-derived oral RfDs, inhalation RfCs, and associated uncertainty factors and modifying factor values, for the groundwater COPCs at Site 34 are listed in Tables 5.1 and 5.2 in **Appendix H**. USEPA-derived CSFs and IURs are listed in Tables 6.1 and 6.2 in Appendix H, respectively.

7.3.4 Risk Characterization for Site 34

The results of the risk characterization are presented below by receptor. The risk calculations are presented in **Appendix H**, Tables 7.1.RME through 7.5.RME, and 7.1.CTE through 7.3.CTE. A summary of the RME results is presented in **Table 7-13** and **Appendix H**, Tables 9.1.RME through 9.5.RME, and a summary of the CTE results is shown in **Table 7-14** and **Appendix H**, Tables 9.1.CTE through 9.3.CTE. CTE risks were calculated only when the RME hazards exceeded one or the RME carcinogenic risks exceeded 10^{-4}.

Current/Future Industrial Worker, Table 9.1.RME, Appendix H

The risk assessment assumes that a current/future industrial worker could be exposed to shallow groundwater through inhalation of vapors that have migrated to indoor air through vapor intrusion. The RME noncarcinogenic hazard associated with inhalation of indoor air (HI = 0.00039) is less than the acceptable HI of 1.0. The RME carcinogenic risk (6.9×10^{-8}) is less than the acceptable risk range of 1×10^{-6} to 1×10^{-4}.

Future Adult Resident (Non-carcinogenic Hazard), Tables 9.2.RME and 9.1.CTE, Appendix H

The risk assessment assumed that a future adult resident could be exposed to groundwater through ingestion, dermal contact and inhalation while showering, and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion. Carcinogenic risks were not calculated for an adult resident but were calculated for a lifetime child/adult resident, following USEPA guidance. The RME non-carcinogenic hazard associated with exposure to groundwater (HI = 1.2) is slightly above the acceptable HI of 1.0. However, there are no individual COPCs or target organ/effects with HIs exceeding 1.0. The CTE non-carcinogenic hazard (HI = 0.5) is below the acceptable HI.

Future Child Resident (Non-carcinogenic Hazard), Tables 9.3.RME and 9.2.CTE, Appendix H

The risk assessment assumed that a future child resident could be exposed to groundwater through ingestion, dermal contact and inhalation while showering, and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion.

Carcinogenic risks were not calculated for a child resident but were calculated for a lifetime child/adult resident, following USEPA guidance.

The RME non-carcinogenic hazard associated with exposure to groundwater (HI = 2.9) exceeds the acceptable HI of 1.0. This hazard is primarily associated with ingestion of arsenic (HQ = 1.0). The CTE non-carcinogenic hazard (1.2) also exceeds the acceptable HI of 1.0, however, there are no individual COPCs or target organ/effects with HIs exceeding 1.0.

Future Lifetime Resident (Carcinogenic Risk), Table 9.4.RME and 9.3.CTE, Appendix H

The risk assessment assumes that a lifetime child/adult resident could be exposed to groundwater through ingestion, dermal contact and inhalation while showering, and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion.

The RME carcinogenic risk associated with exposure to groundwater (CR = 4.4×10^{-4}), associated with primarily with ingestion of trichloroethene and arsenic, exceeds the acceptable risk range of 10^{-6} to 10^{-4}. The CTE carcinogenic risk (CR = 9.5×10^{-5}) is within the acceptable risk range.

Future Construction Worker, Table 9.4.RME, Appendix H

The risk assessment assumes that a future construction worker could be exposed to groundwater through dermal contact during excavation and construction activities.

The RME non-carcinogenic hazard associated with exposure to groundwater (HI = 0.27) is less than the acceptable HI of 1.0. The RME carcinogenic risk (1.4×10^{-6}) is within the acceptable risk range of 10^{-6} to 10^{-4}.

7.3.5 Uncertainty Associated with Site 34 HHRA

The general uncertainties associated with the HHRA are discussed in Section 7.1.6. Below is a discussion of the uncertainties specific to the evaluation of risks associated with Site 34 groundwater.

The future residential scenario was the only scenario with a calculated HI or cancer risk above acceptable risk levels. These risks and hazards were primarily associated with dissolved arsenic and trichloroethene, with a smaller contribution from additional VOCs detected in the groundwater. Arsenic was only detected in one of the six groundwater samples, and the detected concentration was "J" qualified, indicating the concentration was estimated and below the detection limit. Trichloroethene was detected in five of the six groundwater samples, with four of the detected concentrations above the screening level. The highest concentrations of the VOCs were detected in GW05 and GW01. The future residential scenario evaluated in the risk assessment is very conservative. It is unlikely that the site will be used for future residential development, and even more unlikely that the Yorktown aquifer groundwater would be used as a future potable water supply.

7.3.6 Site 34 Human Health Risk Summary

The HHRA was conducted to evaluate the potential human health risks associated with groundwater at Site 34. This baseline risk assessment was conducted to characterize potential current and future human health risks on the basis of potential and unlikely (but

conservative) receptor populations and exposure scenarios if no remedial action is implemented.

Appendix H, Tables 9.1.RME through 9.5.RME and Tables 9.1.CTE through 9.3.CTE summarize the RME and CTE potential hazards and risks to each receptor as described in Section 7.3.4. **Appendix H**, Tables 10.1.RME through 10.3.RME and 10.1.CTE show the receptor scenarios with a total HI greater than 1.0 or total carcinogenic risks greater than 10^{-4}. Constituents that contribute HIs greater than 0.1 or carcinogenic risks greater than 10^{-6} (the chemicals of concern for any future additional evaluation) are included in the table.

The RME noncarcinogenic hazard and RME carcinogenic risk to the industrial worker associated with vapor intrusion into indoor air are less than USEPA's target levels. Estimated RME non-carcinogenic hazards and carcinogenic risks associated with the future construction worker exposure to groundwater in an open excavation scenario are also less than or within the acceptable risk range. The future residential scenario is the only scenario with an RME HI or carcinogenic risk exceeding the acceptable non-carcinogenic HI of 1.0 or carcinogenic risk range of 10^{-6} to 10^{-4}. The RME non-carcinogenic risk to future child resident is primarily associated with arsenic (with smaller contributions from 1,1-DCE, cis-1,2-DCE, and RDX). The carcinogenic risk to the future resident is primarily associated with tetrachloroethene and arsenic (with smaller contributions from additional chlorinated VOCs and RDX). The RME target organ HIs for the adult resident are below the acceptable HI, and the CTE non-carcinogenic hazard to the adult resident is below the acceptable HI. The CTE non-carcinogenic hazard to the child resident exceeds the acceptable HI of 1.0, however, there are no individual COPCs or target organ/effects with HIs exceeding 1.0. The CTE carcinogenic risk to the resident slightly is within the acceptable carcinogenic risk range. The future residential land use scenario evaluated in this assessment is very conservative because it is assumed that land use will not change in the future, and if it did, it is unlikely that the groundwater would be used as a potable water supply.

7.4 Human Health Risk Assessment for Surface Water and Sediment

This section presents the HHRA for Sites 8 and 34 surface water and sediment. Selection of COPCs, calculation of EPCs, risk characterization (risk estimates), discussion of the site-specific uncertainties in the HHRA, and the HHRA summary are presented below. Methodologies followed for the HHRA are presented in Section 7.1.

7.4.1 Identification of Surface Water and Sediment COPCs

This subsection includes a summary of the surface water and sediment data evaluated by the HHRA and presents the COPCs selected for further evaluation. A discussion of the site investigations and surface water and sediment data collected at Sites 8 and 34 are presented in Section 6.

Data Summary

Data were evaluated by the quantitative risk assessment to characterize potential current and future risks based on current site conditions. All of the data used in the risk assessment were fully validated and are assumed to represent current conditions. **Table 7-15** lists the surface water and sediment samples collected from the Eastern Branch of Felgates Creek that

were evaluated for the HHRA. Unfiltered surface water data were used to evaluate exposure to the surface water for all receptors, as potential receptors would be expected to be exposed directly to the surface water in the creek.

Summary of COPCs

Appendix I, Tables 2.1 and 2.2, present the screening to identify the COPCs for the surface water and sediment. **Table 7-16** summarizes the constituents that were selected as COPCs for each medium. Arsenic and chromium were identified as a COPC for surface water and sediment.

7.4.2 Exposure Assessment for Surface Water and Sediment

A general discussion of exposure assessment is included in Section 7.1.3. The CSM for human health is presented in **Figure 7-1**.

Site 8 is located along the Eastern Branch of Felgates Creek. The drainage way from the site discharges to the Eastern Branch of Felgates Creek. Site 34 slopes to a flat marsh wetland north of the main channel of the Eastern Branch of Felgates Creek.

Appendix I, Table 1 and **Table 7-17** summarize the potentially exposed populations evaluated by this risk assessment. Under current land use conditions, potential receptors exposed to surface water and sediment are assumed to be adult, adolescent, and child trespassers/visitors. Industrial site workers are not likely to contact the surface water and sediment in the creek, and were not evaluated as potential receptors.

In summary, the current land use exposure routes for quantitative evaluation are:

- **Trespasser (Adult, Adolescent, and Child)—**Incidental ingestion of and dermal contact with surface water and sediment

Although future site use is expected to remain the same as current site use, unrestricted land use was evaluated, along with potential industrial site use. Therefore, both industrial and residential uses were evaluated. Potential future receptors exposed to surface water and sediment, in addition to the current receptors are assumed to be adult construction workers. Residential exposures to surface water and sediment were not evaluated in the risk assessment. It was assumed that the trespasser/visitor scenario would be representative of future residents exposed to surface water and sediment.

To summarize, future exposure routes include the current exposure routes and the following:

- **Construction Worker—**Incidental ingestion of and dermal contact with surface water and sediment

Calculation of EPCs

The approach used to calculate EPCs is presented in Section 7.1.3.

Appendix I presents the RME EPCs (Tables 3.1.RME and 3.2.RME) for the COPCs in surface water and sediment.

Estimation of Chemical Intakes for Individual Pathways

The media-specific and exposure scenario–specific intake equations and exposure parameter values used in this assessment are provided in **Appendix I**, Tables 4.1.RME and 4.2.RME.

7.4.3 Toxicity Assessment for Surface Water and Sediment

A discussion of toxicity assessment is provided in Section 7.1.4. USEPA-derived oral RfDs, inhalation RfCs, and associated uncertainty factors and modifying factor values, for the surface water and sediment COPCs are listed in Tables 5.1 and 5.2 in **Appendix I**. USEPA-derived CSFs and IURs are listed in Tables 6.1 and 6.2 in **Appendix I**, respectively.

7.4.4 Risk Characterization for Surface Water and Sediment

The results of the risk characterization are presented below by receptor. The risk calculations are presented in **Appendix I**, Tables 7.1.RME through 7.4.RME. A summary of the RME results is presented in **Table 7-18** and **Appendix I**, Tables 9.1.RME through 9.4.RME. CTE risks were not calculated because the RME hazards were less than one and the RME carcinogenic risks were less than 10^{-4}.

Current/Future Trespasser/Visitor (Adult), Table 9.1.RME, Appendix I

The risk assessment assumes that a current/future adult trespasser/visitor could be exposed to surface water and sediment via incidental ingestion and dermal absorption.

The RME non-carcinogenic hazard associated with exposure to surface water and sediment (HI = 0.032) is less than the acceptable HI of 1.0. The RME carcinogenic risk (2.5×10^{-6}) is within the acceptable risk range of 10^{-6} to 10^{-4}.

Current/Future Trespasser/Visitor (Adolescent), Table 9.2.RME, Appendix I

The risk assessment assumes that a current/future adolescent trespasser/visitor could be exposed to surface water and sediment via incidental ingestion and dermal absorption.

The RME non-carcinogenic hazard associated with exposure to surface water and sediment (HI = 0.026) is less than the acceptable HI of 1.0. The RME carcinogenic risk (1.1×10^{-6}) is below the acceptable risk range of 10^{-6} to 10^{-4}.

Current/Future Trespasser/Visitor (Child), Table 9.3.RME, Appendix I

The risk assessment assumes that a current/future child trespasser/visitor could be exposed to surface water and sediment via incidental ingestion and dermal absorption.

The RME non-carcinogenic hazard associated with exposure to surface water and sediment (HI = 0.085) is less than the acceptable HI of 1.0. The RME carcinogenic risk (3.8×10^{-6}) is within the acceptable risk range of 10^{-6} to 10^{-4}.

Future Construction Worker, Table 9.4.RME, Appendix I

The risk assessment assumes that a future construction worker could be exposed to surface water and sediment through ingestion and dermal contact.

The RME non-carcinogenic hazard associated with exposure to surface water and sediment (HI = 0.0059) is less than the acceptable HI of 1.0. The RME carcinogenic risk (6.4×10^{-8}) is less than the acceptable risk range of 10^{-6} to 10^{-4}.

7.4.5 Uncertainty Associated with Surface Water and Sediment HHRA

The general uncertainties associated with the HHRA are discussed in Section 7.1.6.

7.4.6 Surface Water and Sediment Human Health Risk Summary

The HHRA was conducted to evaluate the potential human health risks associated with surface water and sediment at Sites 8 and 34. This baseline risk assessment was conducted to characterize potential current and future human health risks on the basis of potential receptor populations and exposure scenarios if no remedial action is implemented.

Appendix I, Tables 9.1.RME through 9.4.RME summarize the RME potential hazards and risks to each receptor as described in Section 7.5.4. Estimated non-carcinogenic hazards and carcinogenic risks associated with exposure to surface water and sediment for all potential current or future receptors are less than or within the acceptable risk range.

Table 7-1

Site 8, Summary of Data Quantitatively Used in HHRA

Remedial Investigation Report for Groundwater at Sites 8 and 34

Naval Weapons Station Yorktown, Yorktown, Virginia

Medium	Date of Sampling	Sample Location	Sample	Parameters
Yorktown Aquifer				
Groundwater	11/8/2007	YS08-GW01A	YS08-GW01-1107	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives
	11/13/2007	YS08-GW01	YS08-GW01A-1107	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives
	11/13/2007	YS08-GW03	YS08-GW03-1107	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives
	11/14/2007	YS08-GW04	YS08-GW04-1107	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives
	11/14/2007	YS08-GW05	YS08-GW05-1107	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives
	8/11/2008	YS08-GW07	YS08-GW07-0808	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives
	8/13/2009	YS08-GW08	YS08-GW08-0808	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives
	8/11/2009	YS08-GW09	YS08-GW09-0808	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives
	8/11/2009	YS08-GW09	YS08-GW09P-0808[1]	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives
	8/11/2009	YS08-GW09A	YS08-GW09A-0808	VOCs, SVOCs, Pesticides, Total Metals, Dissolved Metals, Explosives

Notes:

VOCs - Volatile organic constituents

[1] Duplicate of sample YS08-GW09-0808

Table 7-2

Site 8, Summary of Chemicals of Potential Concern for the Baseline Risk Assessment
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Tap Water	
Chloroform	3,5-Dinitroaniline
Tetrachloroethene	4-Amino-2,6-dinitrotoluene
Trichloroethene	RDX
Vinyl chloride	Antimony-dissolved
bis(2-Ethylhexyl)phthalate	Chromium-dissolved
2,4,6-Trinitrotoluene	Manganese-dissolved
2-Amino-4,6-dinitrotoluene	
Water in Excavation Pit	
Chloroform	4-Amino-2,6-dinitrotoluene
Tetrachloroethene	RDX
Trichloroethene	Antimony
Vinyl chloride	Arsenic
bis(2-Ethylhexyl)phthalate	Chromium
2,4,6-Trinitrotoluene	Cobalt
2-Amino-4,6-dinitrotoluene	Iron
3,5-Dinitroaniline	Manganese
	Vanadium
Water Vapors at Showerhead and Excavation Pit	
Chloroform	Tetrachloroethene
Trichloroethene	Vinyl chloride
Vapor Intrusion from Groundwater to Indoor Air	
Tetrachloroethene	

TABLE 7-3
Site 8, Potentially Complete Human Health Exposure Pathways Conceptual Site Model
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Land Use	Media	Potentially Exposed Populations	Exposure Route (Human Health)	Pathway Selected for Evaluation	Rationale
Current/Future					
Industrial	Vapor Intrusion from Groundwater to Indoor Air	Industrial Worker	Inhalation	Yes	Industrial workers may inhale vapors from groundwater in indoor air while performing work activities inside a building.
Future					
Residential	Tap Water	Residents - Adults and Children	Ingestion and dermal contact	Yes	Groundwater is not currently used on-site as a water supply and the site is not expected to be developed for residential use; however, a future residential scenario is included for a conservative evaluation of unrestricted land use.
	Water Vapors at Showerhead	Residents - Adults and Children	Inhalation	Yes	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
	Vapor Intrusion from Groundwater to Indoor Air	Residents - Adults and Children	Inhalation	Yes	Although unlikely, if future residence constructed at the site, vapors from groundwater could migrate to indoor building air.
Residential or Industrial	Water in Excavation Pit	Construction Worker	Dermal contact and inhalation	Yes	Workers may inhale vapors and have exposed skin surfaces come into contact with shallow groundwater during excavation activities.

Table 7-4
Site 8, Groundwater to Indoor Air Parameters Used in the Johnson and Ettinger Model - Industrial Scenario Building 45
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Symbol	Parameter	Description	Selected Value	Units	Sources
T_S	Average Soil/Groundwater Temperature		19.8	°C	Site-specific average, November 2007 (Table 4.2)
L_F	Depth Below Grade to Bottom of Enclosed Space Floor	This is the depth from soil surface to the bottom of the floor in contact with soil	15	cm	Default value in User's Guide for slab-on-grade construction (USEPA 2004).
L_{WT}	Depth Below Grade to Water Table		299	cm	Depth to groundwater conservatively based on monitoring well YS08-GW03 (Table 4-3, depth to water - 9.82 ft)
h_A	Thickness of Soil Stratum A		299	cm	Soil stratum is modeled as a single soil type.
h_B	Thickness of Soil Stratum B		NA	cm	Not Used
h_C	Thickness of Soil Stratum C		NA	cm	Not Used
	Soil Stratum Directly Above Water Table		A	unitless	Consistent with the deepest stratum with a specified thickness (h_A).
	SCS Soil Type Above Water Table		SI	unitless	Based on site soil borings, silt is conservative predominant soil type at Site 8.
	Soil Stratum A SCS Soil Type	Used to estimate soil vapor permeability	SI	unitless	Soils modeled using conservative predominant soil type present.
k_v	User-defined Soil Vapor Permeability	A parameter associated with convective transport of vapors within the zone of influence of a building. It is related to the size and shape of connected soil pores	Not Used	cm^2	Not Used
ρ_b^A	Stratum A Soil Dry Bulk Density		1.35	g/cm^3	Default value in User's Guide (USEPA 2004).
n^A	Stratum A Total Soil Porosity	Used with water-filled porosity to calculate air filled porosity (see below)	0.489	unitless	Default value in User's Guide (USEPA 2004).
θ_w^A	Stratum A Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	0.167	cm^3/cm^3	Default value in User's Guide (USEPA 2004).
ρ_b^B	Stratum B Soil Dry Bulk Density		NA	g/cm^3	Not Used
n^B	Stratum B Total Soil Porosity	Used with water-filled porosity to calculate air filled porosity (see below)	NA	unitless	Not Used
θ_w^B	Stratum B Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	NA	cm^3/cm^3	Not Used
ρ_b^C	Stratum C Soil Dry Bulk Density		NA	g/cm^3	Not Used
n^C	Stratum C Total Soil Porosity	Used with water-filled porosity to calculate air filled porosity (see below)	NA	unitless	Not Used
θ_w^C	Stratum C Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	NA	cm^3/cm^3	Not Used
L_{crack}	Enclosed Space Floor Thickness		10	cm	Default value in User's Guide (USEPA 2004).
Δ_P	Soil-Building Pressure Differential		NA	$g/cm\text{-}s^2$	Not Used - Qsoil calculated directly from building parameters.
L_B	Enclosed Space Floor Length		3,353	cm	Length of first floor (approximation of 110')
W_B	Enclosed Space Floor Width		1,524	cm	Width of first floor (approximation of 50')
H_B	Enclosed Space Height		457.2	cm	First floor height (conservatively assume uniform height of 15 ft)
w	Floor-Wall Seam Crack Width	Represents a gap assumed to exist at the junction between the floor and the foundation perimeter.	NA	cm	Not Used - Qsoil calculated directly from building parameters.
ER	Indoor air exchange rate	Building ventilation rate, expressed in units of air changes per hour (ACH)	0.56	(1/h)	Calculated - ANSI/ASHRAE Standard 62-2001 (see Table 7-4 Supplement A)
Qsoil	Average vapror flow rate into building		12.192	(L/m)	Calculated - NJDEP, 2007 (see Table 7-4 Supplement B)
AT_C	Averaging Time for Carcinogens		70	yrs	Default
AT_{NC}	Averaging Time for Noncarcinogens		25	yrs	Worker scenario (USEPA Exposure Factors 1991)
ED	Exposure Duration		25	yrs	Worker scenario (USEPA Exposure Factors 1991)
EF	Exposure Frequency		250	days/yr	Worker scenario (USEPA Exposure Factors 1991)
TR	Target Risk for Carcinogens	Used to calculate risk-based groundwater concentration	1×10^{-6}	unitless	Not Used
THQ	Target Hazard Quotient for Noncarcinogens	Used to calculate risk-based groundwater concentration	1	days/yr	Not Used

ASHRAE. 2001. Standard 62-2001, Ventilation for Acceptable Indoor Air Quality
USEPA, 1991. U.S. Environmental Protection Agency. Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part B, Development of Risk-based Preliminary
USEPA, 2004. User's Guide for Evaluating Subsurface Vapor Intrusion Into Buildings. Office of Emergency and Remedial Response. February 2004
NA = not applicable

TABLE 7-4 Supplement A

Site 8, Site-Specific Air Exchange Rate Calculations of Building Air Exchange Rate Per Hour Building 456

Remedial Investigation Report for Groundwater at Sites 8 and 34

Naval Weapons Station Yorktown, Yorktown, Virginia

Calculation of Air Changes Per Hour Indoors

$$ACH = \frac{Qbuilding}{V} = \frac{m^3/hr}{m^3} = 1/hr$$

Calculation of $Q_{building}$ (volumetric flow into indoor space)

Assumption	Value	Units	Source
Assumed volumetric airflow per person	20	ft^3/min per person	ASHRAE, 2001, Table 2, minimum outside air requirement for an office
Number of persons per floorspace	7	persons/ 1,000 ft^2	ASHRAE, 2001, Table 2
Building floorspace (do not input value here)	5,500	ft^2	110 ft x 50 ft (Approximate size of building 456.)
Calculated volumetric flow into indoor space	770	ft^3/min	Includes division by 1000 to account for persons per 1000 ft^2
	1,307	m^3/hr	Includes conversion of 0.0283 ft^3/m^3

Calculation of V (volume of indoor space)

Assumption	Value	Units	Source
Building floorspace (input value here)	5,500	ft^2	110 ft x 50 ft (Approximate size of building 456.)
Ceiling height	15	ft	Approximate height of Building 456.
Volume	82,500	ft^3	
	2,335	m^3	Includes conversion of 0.0283 ft^3/m^3

Calculation of ACH

$Q_{building}$	1,307	m^3/hr
Volume	2,335	m^3
ACH = Q/V	**0.56**	**1/hr**

Source:

ASHRAE. 2001. ANSI/ASHRAE Standard 62-2001, Ventilation for Acceptable Indoor Air Quality. American Society of Heating, Refrigerating and Air-Conditioning Engineers.

Table 7-4 Supplement B

Site 8, Calculation of Soil Vapor Entry Rate for Johnson and Ettinger Modeling Building 456

Remedial Investigation Report for Groundwater at Sites 8 and 34

Naval Weapons Station Yorktown, Yorktown, Virginia

$$Qsoil\ (L/\min) = 5\ L/\min \times {Perimeter\ (cm)} \big/ {4{,}000\ cm}$$

Length (cm) =	3,353
Width (cm) =	1,524
Perimeter (cm) = 2L + 2W	9753.6
Qsoil (L/min) =	12.192

This presents a method for calculating the soil vapor entry rate (Qsoil) into a building for purposes of performing vapor intrusion modeling using the Johnson and Ettinger model.

It scales up the default residential soil gas entry rate described in EPA's draft vapor intrusion guidance document (USEPA, 2002) to any other building footprint. This procedure and the accompanying rationale is discussed in detail in the NJDEP vapor intrusion guidance document (NJDEP, 2007). It is based on the following assumptions:

1. The residential default Qsoil value is 5 L/min.
2. The Qsoil value is proportional to the building perimeter.
3. The building is rectangular

Table 7-5
Site 8, Groundwater to Indoor Air Parameters Used in the Johnson and Ettinger Model - Residential Scenario
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Symbol	Parameter	Description	Selected Value	Units	Sources
T_S	Average Soil/Groundwater Temperature		19.8	°C	Site-specific average, November 2007 (Table 4.2)
L_F	Depth Below Grade to Bottom of Enclosed Space Floor	This is the depth from soil surface to the bottom of the floor in contact with soil	15	cm	Default value in User's Guide for slab-on-grade construction (USEPA 2004).
L_{WT}	Depth Below Grade to Water Table		299	cm	Depth to groundwater conservatively based on monitoring well YS08-GW03 (Table 4-3, depth to water - 9.82 ft)
h_A	Thickness of Soil Stratum A		299	cm	Soil stratum is modeled as a single soil type.
h_B	Thickness of Soil Stratum B		NA	cm	Not Used
h_C	Thickness of Soil Stratum C		NA	cm	Not Used
	Soil Stratum Directly Above Water Table		A	unitless	Consistent with the deepest stratum with a specified thickness (h_A).
	SCS Soil Type Above Water Table		SI	unitless	Based on site soil borings, silt is conservative predominant soil type at Site 8.
	Soil Stratum A SCS Soil Type	Used to estimate soil vapor permeability	SI	unitless	Soils modeled using conservative predominant soil type present.
k_v	User-defined Soil Vapor Permeability	A parameter associated with convective transport of vapors within the zone of influence of a building. It is related to the size and shape of connected soil pores	Not Used	cm^2	Not Used
ρ_b^A	Stratum A Soil Dry Bulk Density		1.35	g/cm^3	Default value in User's Guide (USEPA 2004).
n^A	Stratum A Total Soil Porosity	Used with water-filled porosity to calculate air-filled porosity (see below)	0.489	unitless	Default value in User's Guide (USEPA 2004).
θ_w^A	Stratum A Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	0.167	cm^3/cm^3	Default value in User's Guide (USEPA 2004).
ρ_b^B	Stratum B Soil Dry Bulk Density		NA	g/cm^3	Not Used
n^B	Stratum B Total Soil Porosity	Used with water-filled porosity to calculate air-filled porosity (see below)	NA	unitless	Not Used
θ_w^B	Stratum B Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	NA	cm^3/cm^3	Not Used
ρ_b^C	Stratum C Soil Dry Bulk Density		NA	g/cm^3	Not Used
n^C	Stratum C Total Soil Porosity	Used with water-filled porosity to calculate air-filled porosity (see below)	NA	unitless	Not Used
θ_w^C	Stratum C Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	NA	cm^3/cm^3	Not Used
L_{crack}	Enclosed Space Floor Thickness		10	cm	Default value in User's Guide (USEPA 2004).
Δ_P	Soil-Building Pressure Differential		NA	$g/cm\text{-}s^2$	Not Used - Qsoil calculated directly from building parameters.
L_B	Enclosed Space Floor Length		1000	cm	Default, users guide (USEPA, 2004)
W_B	Enclosed Space Floor Width		1000	cm	Default, users guide (USEPA, 2004)
H_B	Enclosed Space Height		244	cm	Default, users guide (USEPA, 2004)
w	Floor-Wall Seam Crack Width	Represents a gap assumed to exist at the junction between the floor and the foundation perimeter.	NA	cm	Not Used - Qsoil calculated directly from building parameters.
ER	Indoor air exchange rate	Building ventilation rate, expressed in units of air changes per hour (ACH)	0.25	(1/h)	Default, users guide (USEPA, 2004)
Qsoil	Average vapror flow rate into building		5.0	(L/m)	Default, users guide (USEPA, 2004)
AT_C	Averaging Time for Carcinogens		70	yrs	default
AT_{NC}	Averaging Time for Noncarcinogens		30	yrs	EPA, 1989
ED	Exposure Duration		30	yrs	EPA, 1991
EF	Exposure Frequency		350	days/yr	EPA, 1991
TR	Target Risk for Carcinogens	Used to calculate risk-based groundwater concentration	1×10^{-6}	unitless	
THQ	Target Hazard Quotient for Noncarcinogens	Used to calculate risk-based groundwater concentration	1	days/yr	

USEPA, 1991. U.S. Environmental Protection Agency. Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part B, Development of Risk-based Preliminary
USEPA, 2004. User's Guide for Evaluating Subsurface Vapor Intrusion Into Buildings. Office of Emergency and Remedial Response. February 2004
NA = not applicable

Table 7-6
Site 8, Summary of RME Cancer Risks and Hazard Indices
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

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 with HI>1
Current/Future Industrial Worker	Groundwater	Inhalation/Indoor Air	2.2E-08				4.0E-05	
		Total	2.2E-08				4.0E-05	
Future Resident Adult	Groundwater	Ingestion	N/A				6.6E+00	2,4,6-Trinitrotoluene, 4-Amino-2,6-dinitrotoluene
		Dermal Contact	N/A				3.2E-03	
		Inhalation/Shower	N/A				4.7E-01	
		Inhalation/Indoor Air	N/A				2.5E-04	
		Total	N/A				7.1E+00	
Future Resident Child	Groundwater	Ingestion	N/A				1.5E+01	2,4,6-Trinitrotoluene, 2-Amino-4,6-dinitrotoluene, 4-Amino-2,6-dinitrotoluene, RDX
		Dermal Contact	N/A				1.1E+00	
		Inhalation/Shower	N/A				8.9E-03	
		Inhalation/Indoor Air	N/A				7.2E-04	
		Total	N/A				1.7E+01	
Future Resident Adult/Child	Groundwater	Ingestion	5.0E-04	RDX, Chromium-dissolved	Tetrachloroethene, Vinyl chloride, bis(2-ethylhexyl)phthalate, 2,4,6-Trinitrotoluene	Chloroform	N/A	
		Dermal Contact	5.2E-05		Tetrachloroethene ,bis(2-Ethylhexyl)phthalate	RDX, Chromium-dissolved	N/A	
		Inhalation/Shower	3.2E-06			Chloroform	N/A	
		Inhalation/Indoor Air	4.9E-07				N/A	
		Total	5.6E-04				NA	
Future Construction Worker - Adult	Groundwater	Ingestion	N/A				N/A	
		Dermal Contact	7.6E-07				2.1E-01	
		Inhalation	8.6E-09				3.5E-04	
		Total	7.7E-07				2.1E-01	

N/A - Not applicable, pathway incomplete.

Table 7-7
Site 8, Summary of CTE Cancer Risks and Hazard Indices
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

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 with HI>1
Future Resident Adult	Columbia Aquifer Groundwater	Ingestion	N/A				5.6E-01	
		Dermal Contact	N/A				3.8E-02	
		Inhalation/Shower	N/A				1.1E-02	
		Inhalation/Indoor Air	N/A				4.8E-04	
		Total	N/A				6.0E-01	
Future Resident Child	Columbia Aquifer Groundwater	Ingestion	N/A				1.9E+00	
		Dermal Contact	N/A				7.6E-02	
		Inhalation/Shower	N/A				7.5E-04	
		Inhalation/Indoor Air	N/A				4.8E-07	
		Total	N/A				1.9E+00	
Future Resident Adult/Child	Columbia Aquifer Groundwater	Ingestion	5.8E-05		Tetrachloroethene, RDX, Chromium-dissolved	Vinyl chloride, bis(2-Ethylhexyl)phthalate, 2,4,6-Trintrotoluene	N/A	
		Dermal Contact	7.7E-06			Tetrachloroethene, bis(2-Ethylhexyl)phthalate	N/A	
		Inhalation/Shower	2.0E-07				N/A	
		Inhalation/Indoor Air	1.7E-07				N/A	
		Total	6.6E-05				N/A	

NA - Not applicable, pathway incomplete.

Table 7-8

Site 34, Summary of Data Quantitatively Used in HHRA

Remedial Investigation Report for Groundwater at Sites 8 and 34

Naval Weapons Station Yorktown, Yorktown, Virginia

Medium	Date of Sampling	Sample Location	Sample	Parameters
Yorktown Aquifer				
Groundwater	11/8/2007	YSA14-GW01	YSA14-GW01-1107	VOCs, total Metals, dissolved Metals, Explosives
	11/7/2007	YSA14-GW01A	YSA14-GW01A-1107	VOCs, total Metals, dissolved Metals, Explosives
	11/7/2007	YSA14-GW01A	YSA14-GW01AP-1107[1]	VOCs, total Metals, dissolved Metals, Explosives
	11/9/2007	YSA14-GW02	YSA14-GW02-1107	VOCs, total Metals, dissolved Metals, Explosives
	11/9/2007	YSA14-GW03	YSA14-GW03-1107	VOCs, total Metals, dissolved Metals, Explosives
	11/8/2007	YSA14-GW05	YSA14-GW05-1107	VOCs, total Metals, dissolved Metals, Explosives
	11/8/2007	YSA14-GW05A	YSA14-GW05A-1107	VOCs, total Metals, dissolved Metals, Explosives

Notes:

VOCs - Volatile organic constituents

[1] Duplicate of sample YSA14-GW01A-1107

Table 7-9

Site 34, Summary of Chemicals of Potential Concern for the Baseline Risk Assessment
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Tap Water	
1,1,2-Trichloroethane	Trichloroethene
1,1-Dichloroethane	cis-1,2-Dichloroethene
1,1-Dichloroethene	Nitrobenzene
1,2-Dichloroethane	RDX
Tetrachloroethene	Arsenic-dissolved
	Chromium-dissolved
Water in Excavation Pit	
1,1,2-Trichloroethane	Aluminum
1,1-Dichloroethane	Arsenic
1,1-Dichloroethene	Cadmium
1,2-Dichloroethane	Chromium
Tetrachloroethene	Cobalt
Trichloroethene	Iron
cis-1,2-Dichloroethene	Manganese
Nitrobenzene	Nickel
RDX	Vanadium
Water Vapors at Showerhead and in Excavation Pit	
1,1,2-Trichloroethane	Tetrachloroethene
1,1-Dichloroethane	Trichloroethene
1,1-Dichloroethene	cis-1,2-Dichloroethene
1,2-Dichloroethene	Nitrobenzene
Vapor Intrusion from Groundwater to Indoor Air	
1,1-Dichloroethane	Trichloroethene
1,1-Dichloroethene	cis-1,2-Dichloroethene

TABLE 7-10
Site 34, Potentially Complete Human Health Exposure Pathways Conceptual Site Model
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Land Use	Media	Potentially Exposed Populations	Exposure Route (Human Health)	Pathway Selected for Evaluation	Rationale
Current/Future					
Industrial	Vapor Intrusion from Groundwater to Indoor Air	Industrial Worker	Inhalation	Yes	Vapors from groundwater could migrate to indoor building air.
Future					
Residential	Tap Water	Residents - Adults and Children	Ingestion and dermal contact	Yes	Groundwater is not currently used on-site as a water supply and the site is not expected to be developed for residential use; however, a future residential scenario is included for a conservative evaluation of unrestricted land use.
	Water Vapors at Showerhead	Residents - Adults and Children	Inhalation	Yes	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
	Vapor Intrusion from Groundwater to Indoor Air	Residents - Adults and Children	Inhalation	Yes	Although unlikely, if future residence constructed at the site, vapors from groundwater could migrate to indoor building air.
Residential or Industrial	Water in Excavation Pit	Construction Worker	Dermal contact and inhalation	Yes	Workers may inhale vapors and have exposed skin surfaces come into contact with shallow groundwater during excavation activities.

Table 7-11
Site 34, Groundwater to Indoor Air Parameters Used in the Johnson and Ettinger Model - Industrial ScenarioBunkders 459 and 53
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Symbol	Parameter	Description	Selected Value	Units	Sources
T_S	Average Soil/Groundwater Temperature		17.7	°C	Site-specific average, November 2007 (Table 5.2)
L_F	Depth Below Grade to Bottom of Enclosed Space Floor	This is the depth from soil surface to the bottom of the floor in contact with soi	15	cm	Default value in User's Guide for slab-on-grade construction (USEPA 2004).
L_{WT}	Depth Below Grade to Water Table		247	cm	Depth to groundwater conservatively based on monitoring well YSA14-GW02 (Table 5-3, depth to water - 8.1 ft)
h_A	Thickness of Soil Stratum A		247	cm	Soil stratum is modeled as a single soil type.
h_B	Thickness of Soil Stratum B		NA	cm	Not Used
h_C	Thickness of Soil Stratum C		NA	cm	Not Used
	Soil Stratum Directly Above Water Table		A	unitless	Consistent with the deepest stratum with a specified thickness (h_A).
	SCS Soil Type Above Water Table		SIC	unitless	Based on site borings, silty clay is predominant soil type at SSA 14.
	Soil Stratum A SCS Soil Type	Used to estimate soil vapor permeability	SIC	unitless	Soils modeled using predominant soil type present.
k_v	User-defined Soil Vapor Permeability	A parameter associated with convective transport of vapors within the zone of influence of a building. It is related to the size and shape of connected soil pores	Not Used	cm^2	Not Used
ρ_b^A	Stratum A Soil Dry Bulk Density		1.38	g/cm^3	Default value in User's Guide (USEPA 2004).
n^A	Stratum A Total Soil Porosity	Used with water-filled porosity to calculate air-filled porosity (see below)	0.481	unitless	Default value in User's Guide (USEPA 2004).
θ_w^A	Stratum A Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	0.216	cm^3/cm^3	Default value in User's Guide (USEPA 2004).
ρ_b^B	Stratum B Soil Dry Bulk Density		NA	g/cm^3	Not Used
n^B	Stratum B Total Soil Porosity	Used with water-filled porosity to calculate air-filled porosity (see below)	NA	unitless	Not Used
θ_w^B	Stratum B Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	NA	cm^3/cm^3	Not Used
ρ_b^C	Stratum C Soil Dry Bulk Density		NA	g/cm^3	Not Used
n^C	Stratum C Total Soil Porosity	Used with water-filled porosity to calculate air-filled porosity (see below)	NA	unitless	Not Used
θ_w^C	Stratum C Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	NA	cm^3/cm^3	Not Used
L_{crack}	Enclosed Space Floor Thickness		10	cm	Default value in User's Guide (USEPA 2004).
Δ_P	Soil-Building Pressure Differential		NA	$g/cm\text{-}s^2$	Not Used - Qsoil calculated directly from building parameters.
L_B	Enclosed Space Floor Length		457	cm	Length of first floor (approximation of 15')
W_B	Enclosed Space Floor Width		457	cm	Width of first floor (approximation of 15')
H_B	Enclosed Space Height		457	cm	First floor height (conservatively assumed uniform height of 15 ft)
w	Floor-Wall Seam Crack Width	Represents a gap assumed to exist at the junction between the floor and the foundation perimeter.	NA	cm	Not Used - Qsoil calculated directly from building parameters.
ER	Indoor air exchange rate	Building ventilation rate, expressed in units of air changes per hour (ACH)	0.34	(1/h)	Calculated - ANSI/ASHRAE Standard 62-2001 (see Table 7-11 Supplement A)
Qsoil	Average vapror flow rate into building		2.286	(L/m)	Calculated - NJDEP, 2007 (see Table 7-11 Supplement B)
AT_C	Averaging Time for Carcinogens		70	yrs	Default
AT_{NC}	Averaging Time for Noncarcinogens		25	yrs	Worker scenario (USEPA Exposure Factors 1991)
ED	Exposure Duration		25	yrs	Worker scenario (USEPA Exposure Factors 1991)
EF	Exposure Frequency		60	days/yr	Based on assumption that bunkers are occupied 5 days per month.
TR	Target Risk for Carcinogens	Used to calculate risk-based groundwater concentration	1×10^{-6}	unitless	Not Used
THQ	Target Hazard Quotient for Noncarcinogens	Used to calculate risk-based groundwater concentration	1	days/yr	Not Used

ASHRAE. 2001. Standard 62-2001, Ventilation for Acceptable Indoor Air Quality
USEPA, 1991. U.S. Environmental Protection Agency. Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part B, Development of Risk-based Preliminary
USEPA, 2004. User's Guide for Evaluating Subsurface Vapor Intrusion Into Buildings. Office of Emergency and Remedial Response. February 2004
NA = not applicable

TABLE 7-11 Supplement A

Site 34, Site-Specific Air Exchange Rate Calculations of Building Air Exchange Rate Per Hour Bunkers 459 and 537

Remedial Investigation Report for Groundwater at Sites 8 and 34

Naval Weapons Station Yorktown, Yorktown, Virginia

Calculation of Air Changes Per Hour Indoors

$$ACH = \frac{Qbuilding}{V} = \frac{m^3/hr}{m^3} = 1/hr$$

Calculation of $Q_{building}$ (volumetric flow into indoor space)

Assumption	Value	Units	Source
Assumed volumetric airflow per person	20	ft^3/min per person	ASHRAE, 2001, Table 2, minimum outside air requirement for an office
Number of persons per floorspace	7	persons/ 1,000 ft^2	ASHRAE, 2001, Table 2
Building floorspace (do not input value here)	225	ft^2	15 ft x 15 ft (Approximate size of bunkers.)
Calculated volumetric flow into indoor space	32	ft^3/min	Includes division by 1000 to account for persons per 1000 ft^2
	53	m^3/hr	Includes conversion of 0.0283 ft^3/m^3

Calculation of V (volume of indoor space)

Assumption	Value	Units	Source
Building floorspace (input value here)	225	ft^2	15 ft x 15 ft (Approximate size of bunkers.)
Ceiling height	25	ft	Average height of buildings within 100' of plume.
Volume	5,625	ft^3	
	159	m^3	Includes conversion of 0.0283 ft^3/m^3

Calculation of ACH

$Q_{building}$	53	m^3/hr
Volume	159	m^3
ACH = Q/V	**0.34**	**1/hr**

Source:

ASHRAE. 2001. ANSI/ASHRAE Standard 62-2001, Ventilation for Acceptable Indoor Air Quality. American Society of Heating, Refrigerating and Air-Conditioning Engineers.

TABLE 7-11 Supplement B

Site 34, Calculation of Soil Vapor Entry Rate for Johnson and Ettinger Modeling Bunkers 459 and 537

Remedial Investigation Report for Groundwater at Sites 8 and 34

Naval Weapons Station Yorktown, Yorktown, Virginia

$$Qsoil\ (L/\min) = 5\ L/\min \times Perimeter\ (cm) \Big/ 4{,}000\ cm$$

Length (cm) =	457
Width (cm) =	457
Perimeter (cm) = 2L + 2W	1828.8
Qsoil (L/min) =	2.286

This presents a method for calculating the soil vapor entry rate (Qsoil) into a building for purposes of performing vapor intrusion modeling using the Johnson and Ettinger model.

It scales up the default residential soil gas entry rate described in EPA's draft vapor intrusion guidance document (USEPA, 2002) to any other building footprint. This procedure and the accompanying rationale is discussed in detail in the NJDEP vapor intrusion guidance document (NJDEP, 2007). It is based on the following assumptions:

1. The residential default Qsoil value is 5 L/min.
2. The Qsoil value is proportional to the building perimeter.
3. The building is rectangular

Table 7-12
Site 34, Groundwater to Indoor Air Parameters Used in the Johnson and Ettinger Model - Residential Scenari
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Symbol	Parameter	Description	Selected Value	Units	Sources
T_S	Average Soil/Groundwater Temperature		17.7	°C	Site-specific average, November 2007 (Table 5.2)
L_F	Depth Below Grade to Bottom of Enclosed Space Floor	This is the depth from soil surface to the bottom of the floor in contact with soil	15	cm	Default value in User's Guide for slab-on-grade construction (USEPA 2004).
L_{WT}	Depth Below Grade to Water Table		247	cm	Depth to groundwater conservatively based on monitoring well YSA14-GW02 (Table 5-3, depth to water - 8.1 ft)
h_A	Thickness of Soil Stratum A		247	cm	Soil stratum is modeled as a single soil type.
h_B	Thickness of Soil Stratum B		NA	cm	Not Used
h_C	Thickness of Soil Stratum C		NA	cm	Not Used
	Soil Stratum Directly Above Water Table		A	unitless	Consistent with the deepest stratum with a specified thickness (h_A).
	SCS Soil Type Above Water Table		SIC	unitless	Based on site borings, silty clay is predominant soil type at SSA 14.
	Soil Stratum A SCS Soil Type	Used to estimate soil vapor permeability	SIC	unitless	Soils modeled using predominant soil type present.
k_v	User-defined Soil Vapor Permeability	A parameter associated with convective transport of vapors within the zone of influence of a building. It is related to the size and shape of connected soil pores	Not Used	cm^2	Not Used
ρ_b^A	Stratum A Soil Dry Bulk Density		1.66	g/cm^3	Default value in User's Guide (USEPA 2004).
n^A	Stratum A Total Soil Porosity	Used with water-filled porosity to calculate air-filled porosity (see below)	0.375	unitless	Default value in User's Guide (USEPA 2004).
θ_w^A	Stratum A Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	0.054	cm^3/cm^3	Default value in User's Guide (USEPA 2004).
ρ_b^B	Stratum B Soil Dry Bulk Density		NA	g/cm^3	Not Used
n^B	Stratum B Total Soil Porosity	Used with water-filled porosity to calculate air-filled porosity (see below)	NA	unitless	Not Used
θ_w^B	Stratum B Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	NA	cm^3/cm^3	Not Used
ρ_b^C	Stratum C Soil Dry Bulk Density		NA	g/cm^3	Not Used
n^C	Stratum C Total Soil Porosity	Used with water-filled porosity to calculate air-filled porosity (see below)	NA	unitless	Not Used
θ_w^C	Stratum C Soil Water-filled porosity	Used with total porosity to calculate air-filled porosity (see below)	NA	cm^3/cm^3	Not Used
L_{crack}	Enclosed Space Floor Thickness		30	cm	Building slab thickness of 12".
Δ_P	Soil-Building Pressure Differential		NA	$g/cm\text{-}s^2$	Not Used - Qsoil calculated directly from building parameters.
L_B	Enclosed Space Floor Length		1000	cm	Default, users guide (USEPA, 2004)
W_B	Enclosed Space Floor Width		1000	cm	Default, users guide (USEPA, 2004)
H_B	Enclosed Space Height		244	cm	Default, users guide (USEPA, 2004)
w	Floor-Wall Seam Crack Width	Represents a gap assumed to exist at the junction between the floor and the foundation perimeter.	NA	cm	Not Used - Qsoil calculated directly from building parameters.
ER	Indoor air exchange rate	Building ventilation rate, expressed in units of air changes per hour (ACH)	0.25	(1/h)	Default, users guide (USEPA, 2004)
Qsoil	Average vapror flow rate into building		5.0	(L/m)	Default, users guide (USEPA, 2004)
AT_C	Averaging Time for Carcinogens		70	yrs	default
AT_{NC}	Averaging Time for Noncarcinogens		30	yrs	EPA, 1989
ED	Exposure Duration		30	yrs	EPA, 1991
EF	Exposure Frequency		350	days/yr	EPA, 1991
TR	Target Risk for Carcinogens	Used to calculate risk-based groundwater concentration	1×10^{-6}	unitless	
THQ	Target Hazard Quotient for Noncarcinogens	Used to calculate risk-based groundwater concentration	1	days/yr	

USEPA, 1991. U.S. Environmental Protection Agency. Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part B, Development of Risk-based Preliminary
USEPA, 2004. User's Guide for Evaluating Subsurface Vapor Intrusion Into Buildings. Office of Emergency and Remedial Response. February 2004
NA = not applicable

Table 7-13
Site 34, Summary of RME Cancer Risks and Hazard Indices
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

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 with HI>1
Current/Future Industrial Worker	Groundwater	Inhalation/Indoor Air	6.9E-08		Trichloroethene	1,1-Dichloroethane	3.9E-04	
		Total	6.9E-08				3.9E-04	
Future Resident Adult	Groundwater	Ingestion	N/A				1.1E+00	
		Dermal Contact	N/A				8.6E-02	
		Inhalation/Shower	N/A				7.2E-02	
		Inhalation/Indoor Air	N/A				5.6E-03	
		Total	N/A				1.2E+00	
Future Resident Child	Groundwater	Ingestion	N/A				2.5E+00	
		Dermal Contact	N/A				2.0E-01	
		Inhalation/Shower	N/A				2.0E-01	
		Inhalation/Indoor Air	N/A				1.6E-02	
		Total	N/A				2.9E+00	
Future Resident Adult/Child	Groundwater	Ingestion	3.2E-04	Trichloroethene, Arsenic-dissolved	Tetrachloroethene, RDX, Chromium-dissolved	1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,2-Dichloroethane	N/A	
		Dermal Contact	4.2E-05		Tetrachloroethene, Trichloroethene		N/A	
		Inhalation/Shower	7.5E-05		Trichloroethene	1,1-Dichloroethane, 1,2-Dichloroethane	N/A	
		Inhalation/Indoor Air	3.5E-06			Trichloroethene	N/A	
		Total	4.4E-04				NA	
Future Construction Worker - Adult	Groundwater	Ingestion	N/A				N/A	
		Dermal Contact	1.2E-06				2.7E-01	
		Inhalation	2.0E-07				7.7E-03	
		Total	1.4E-06				2.7E-01	

N/A - Not applicable, pathway incomplete.

Table 7-14
Site 34, Summary of CTE Cancer Risks and Hazard Indices
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

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 with HI>1
Future Resident Adult	Groundwater	Ingestion	N/A				3.5E-01	
		Dermal Contact	N/A				1.8E-02	
		Inhalation/Shower	N/A				1.2E-01	
		Inhalation/Indoor Air	N/A				4.1E-03	
		Total	N/A				5.0E-01	
Future Resident Child	Groundwater	Ingestion	N/A				1.2E+00	
		Dermal Contact	N/A				3.1E-02	
		Inhalation/Shower	N/A				8.8E-03	
		Inhalation/Indoor Air	N/A				1.1E-02	
		Total	N/A				1.2E+00	
Future Resident Adult/Child	Groundwater	Ingestion	7.5E-05		Tetrachloroethene, Trichloroethene, Arsenic-dissolved	1,1-Dichloroethane, 1,2-Dichloroethane, RDX, Chromium dissolved	N/A	
		Dermal Contact	6.5E-06			Tetrachloroethene, Trichloroethene	N/A	
		Inhalation/Shower	1.2E-05		Trichloroethene		N/A	
		Inhalation/Indoor Air	1.2E-06			Trichloroethene	N/A	
		Total	9.5E-05				NA	

NA - Not applicable, pathway incomplete.

Table 7-15

Summary of Data Quantitatively Used in HHRA, Eastern Branch of Felgates Creek

Remedial Investigation Report for Groundwater at Sites 8 and 34

Naval Weapons Station Yorktown, Yorktown, Virginia

Medium	Date of Sampling	Sample Location	Sample	Parameters
Surface Water	12/11/2007	YS08-SW01	YS08-SW01-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/13/2007	YS08-SW02	YS08-SW02-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/13/2007	YS08-SW03	YS08-SW03-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/13/2007	YS08-SW04	YS08-SW04-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/10/2007	YSA14-SW01	YSA14-SW01-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/14/2007	YSA14-SW02	YSA14-SW02-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/14/2007	YSA14-SW03	YSA14-SW03-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/14/2007	YSA14-SW05	YSA14-SW05-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
Sediment	12/11/2007	YS08-SD01	YS08-SD01-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/13/2007	YS08-SD02	YS08-SD02-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/13/2007	YS08-SD03	YS08-SD03-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/13/2007	YS08-SD04	YS08-SD04-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/10/2008	YSA14-SD01	YSA14-SD01-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/14/2008	YSA14-SD02	YSA14-SD02-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/14/2008	YSA14-SD03	YSA14-SD03-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/14/2008	YSA14-SD05	YSA14-SD05-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
Basewide Background Surface Water	12/10/2007	YBKG-SW01	YBKG-SW01-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/10/2007	YBKG-SW01	YBKG-SW01P-1207[1]	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/14/2007	YBKG-SW02	YBKG-SW02-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/14/2007	YBKG-SW03	YBKG-SW03-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/11/2007	YBKG-SW04	YBKG-SW04-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/11/2007	YBKG-SW05	YBKG-SW05-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
	12/14/2007	YBKG-SW06	YBKG-SW06-1207	VOCs, SVOCs, total Metals, dissolved Metals, Explosives, Pesticides/PCBs
Basewide Background Sediment	12/10/2007	YBKG-SD01	YBKG-SD01-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/10/2007	YBKG-SD01	YBKG-SD01P-1207[2]	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/14/2007	YBKG-SD02	YBKG-SD02-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/14/2007	YBKG-SD03	YBKG-SD03-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/11/2007	YBKG-SD04	YBKG-SD04-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/11/2007	YBKG-SD05	YBKG-SD05-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs
	12/14/2007	YBKG-SD06	YBKG-SD06-1207	VOCs, SVOCs, Metals, Explosives, Pesticides/PCBs

Notes:

VOCs - Volatile organic constituents

SVOCs - Semi-volatile organic constituents

[1]Duplicate of sample YBKG-SW01-1207

[2] Duplicate of sample YBKG-SD01-1207

Table 7-16

Summary of Chemicals of Potential Concern for the Baseline Risk Assessment, Eastern Branch of Felgates Creek

Remedial Investigation Report for Groundwater at Sites 8 and 34

Naval Weapons Station Yorktown, Yorktown, Virginia

Surface Water
Arsenic Chromiun
Sediment
Arsenic Chromium

TABLE 7-17

Potentially Complete Human Health Exposure Pathways Conceptual Site Model, Eastern Branch of Felgates Creek

Remedial Investigation Report for Groundwater at Sites 8 and 34

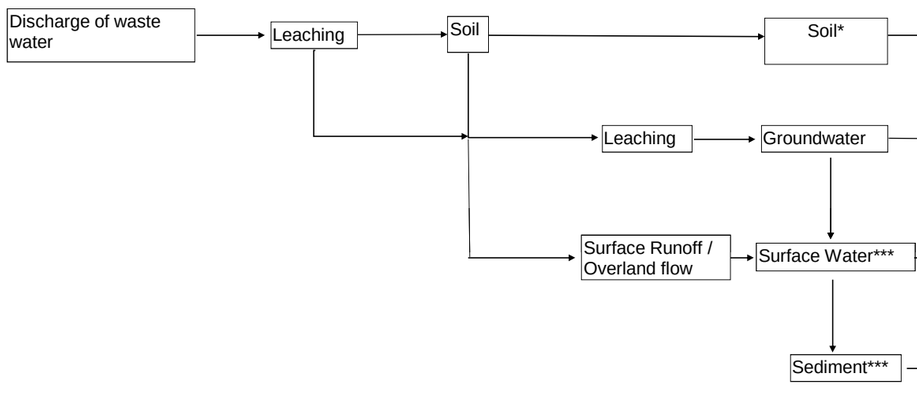
Naval Weapons Station Yorktown, Yorktown, Virginia

Land Use	Media	Potentially Exposed Populations	Exposure Route (Human Health)	Pathway Selected for Evaluation	Rationale
Current/Future					
Residential or Industrial	Surface Water and Sediment	Trespasser/Visitor - Adults, Youth, Children	Ingestion and dermal contact	Yes	Trespassers/visitors may contact sediment during activites
Future					
Residential or Industrial	Surface Water and Sediment	Construction Worker	Ingestion and dermal contact	Yes	Workers may contact surface water and sediment during construction activities

Table 7-18
Summary of RME Cancer Risks and Hazard Indices, Eastern Branch of Felgates Creek
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

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 with HI>1
Current/Future Trespasser/Visitor - Adult	Surface Water	Ingestion	2.1E-07				1.3E-03	
		Dermal Contact	2.5E-08				3.7E-04	
		Inhalation	N/A				N/A	
		Total	2.3E-07				1.6E-03	
	Sediment	Ingestion	1.4E-06				5.6E-03	
		Dermal Contact	9.1E-07				2.4E-02	
		Inhalation	N/A				N/A	
		Total	2.3E-06				3.0E-02	
	Total		2.5E-06				3.2E-02	
Current/Future Trespasser/Visitor - Adolescent	Surface Water	Ingestion	1.1E-07				1.8E-03	
		Dermal Contact	9.1E-09				3.6E-04	
		Inhalation	N/A				N/A	
		Total	1.2E-07				2.1E-03	
	Sediment	Ingestion	7.2E-07				7.7E-03	
		Dermal Contact	2.2E-07				1.6E-02	
		Inhalation	N/A				N/A	
		Total	9.4E-07				2.4E-02	
	Total		1.1E-06				2.6E-02	
Current/Future Trespasser/Visitor - Child	Surface Water	Ingestion	2.4E-07				6.0E-03	
		Dermal Contact	1.0E-08				6.0E-04	
		Inhalation	N/A				N/A	
		Total	2.5E-07				6.6E-03	
	Sediment	Ingestion	3.3E-06				5.2E-02	
		Dermal Contact	2.5E-07				2.6E-02	
		Inhalation	N/A				N/A	
		Total	3.5E-06				7.9E-02	
	Total		3.8E-06				8.5E-02	
Future Construction Worker - Adult	Surface Water	Ingestion	1.7E-09				2.4E-04	
		Dermal Contact	1.6E-09				2.7E-04	
		Inhalation	N/A				N/A	
		Total	3.3E-09				5.1E-04	
	Sediment	Ingestion	5.4E-08				4.0E-03	
		Dermal Contact	7.3E-09				1.4E-03	
		Inhalation	N/A				N/A	
		Total	6.1E-08				5.4E-03	
	Total		6.4E-08				5.9E-03	

N/A - Not applicable, pathway incomplete.



	Potential Human Receptors						
	Current/Future				Future		
Exposure Route	Industrial Worker	Trespasser/ Visitor Adult	Trespasser/ Visitor Youth	Trespasser/ Visitor Child	Residential Adult	Residential Child	Construction Worker
Ingestion	NA	NA	NA	NA	NA	NA	NA
Dermal Contact	NA	NA	NA	NA	NA	NA	NA
Inhalation	NA	NA	NA	NA	NA	NA	NA
Ingestion	NA	NA	NA	NA	X	X	NA
Dermal Contact	NA	NA	NA	NA	X	X	X
Inhalation**	X	NA	NA	NA	X	X	X
Ingestion	NA	X	X	X	NA	NA	X
Dermal Contact	NA	X	X	X	NA	NA	X
Inhalation	NA	NA	NA	NA	NA	NA	NA
Ingestion	NA	X	X	X	NA	NA	X
Dermal Contact	NA	X	X	X	NA	NA	X
Inhalation	NA	NA	NA	NA	NA	NA	NA

*Soil and sediment removal actions have been conducted.
** Foster and Chrostowski Shower Model used for groundwater inhalation during showering (resident).
Concentration in Excavation Trench methodology from the Virginia Voluntary Remediation Program used to calculate concentration in air resulting from volatilization from shallow groundwater in an open excavation for construction workers.
Vapor intrusion from groundwater into indoor air evaluated for industrial worker and resident using Johnson and Ettinger Model.
***Because the sites feed into the same surface water bodies, risks associated with surface water, sediment, and fish/crab were addressed together for both sites.
NA - Not Applicable or pathway is incomplete
X - Potentially complete exposure pathways

Figure 7-1
HHRA CSMs
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown
Yorktown, Virginia

SECTION 8

Ecological Risk Assessment

8.1 Introduction

This section contains a Screening ERA (SERA), constituting Steps 1 and 2 of the ERA process, and the first step (Step 3A) of a Baseline ERA (BERA) for aquatic habitats at Sites 8 and 34. Terrestrial and vegetated wetland habitats are not evaluated as part of this ERA based upon the remedial actions that have occurred at these sites (see Section 6), which have eliminated complete and significant ecological exposure pathways to these habitats.

8.1.1 The Ecological Risk Assessment Process

ERAs are conducted using a tiered, step-wise approach and are punctuated with Scientific Management Decision Points (SMDPs). SMDPs represent points in the ERA process where agreement on conclusions, actions, or methodologies is needed so that the ERA process can continue (or terminate) in a technically defensible manner. The results of the ERA at a particular SMDP are used to determine how the ERA process should proceed, for example, to the next step in the process or directly to a later step. The process continues until a final decision has been reached (i.e., remedial action if unacceptable risks are identified, or no further action if risks are acceptable). The process can also be iterative if data needs are identified at any step; the needed data are collected and the process starts again at the point appropriate to the type of data collected.

This ERA was conducted in accordance with the *Navy Policy for Conducting Ecological Risk Assessments* (CNO, 1999) and the Navy guidance for implementing this ERA policy (NAVFAC, 2003). The Navy ERA policy and guidance, which describe a process consisting of eight steps organized into three tiers, are conceptually similar to the 8-step ERA process outlined in USEPA ERA guidance for the Superfund program (USEPA, 1997a). For both sets of guidance, Steps 1 and 2 involve conducting a SERA using very conservative assumptions. The BERA represents Steps 3 through 7. The BERA uses more realistic assumptions and site-specific data to refine the risk estimates from the SERA for components that fail the initial screen. Step 8 addresses risk management issues. The major differences between the Navy ERA policy/guidance and the USEPA ERA guidance are:

- Navy policy/guidance provides clearly defined criteria for exiting the ERA process at specific points
- Navy policy/guidance divides Step 3 (the first step of the BERA) into two distinct sub-steps (Steps 3A and 3B), with a potential exit point after Step 3A
- Navy policy/guidance incorporates risk management considerations throughout all tiers of the ERA process

The screening (preliminary) problem formulation is the first step of an ERA and establishes the goals, scope, and focus of the SERA. Step 1 of the ERA process is intended to answer two main questions:

- Do complete exposure pathways exist?
- Are sufficient data available to conduct the SERA?

If no complete exposure pathways exist, the ERA process terminates at Step 1 with a conclusion of negligible risk. If one or more complete exposure pathways are known to, or are likely to, exist, the ERA process continues to Step 2 but only evaluates those pathways that have been determined to be critical. An evaluation of the available data is then conducted to determine if they are adequate to support the SERA. If not, additional data are collected before the ERA process continues. The second step of the ERA process involves conducting a screening exposure assessment, a screening effects assessment, and a screening risk calculation (risk characterization).

The results of the SERA are used to evaluate the potential for unacceptable ecological risks based upon very conservative assumptions. If the results of the SERA suggest that further ecological risk evaluation is warranted, the ERA process proceeds to the BERA (Steps 3 through 7), which is a more detailed phase of the ERA process, for the pathways, chemicals, receptors, and areas identified in the SERA. As indicated above, the first step of the BERA (Step 3) is divided into two distinct sub-steps in Navy ERA guidance.

Step 3 of the USEPA ERA guidance consists of the following activities (USEPA, 1997a):

- Refinement of the Chemicals of Potential Concern (COPCs) from the SERA.
- Further characterizing the potential ecological effects of contaminants.
- Refining information on contaminant fate and transport, complete exposure pathways, and receptors potentially at risk.
- Selecting assessment endpoints.
- Refining the conceptual model and risk hypotheses from the SERA.

Step 3A of the Navy policy/guidance (refinement of conservative exposure assumptions) corresponds to the first activity listed above for the USEPA ERA guidance. In Step 3A, a refined evaluation of exposure estimates is conducted using more realistic assumptions and additional methodologies relative to those used in the SERA, which is intended to be a very conservative assessment. Examples of more realistic exposure assumptions include using central tendency (e.g., mean) estimates (rather than maximums) for media concentrations, bioaccumulation factors, and exposure parameters. Examples of additional methodologies include consideration of background concentrations and bioavailability (CNO, 1999; NAVFAC, 2003).

If risk estimates (and their associated uncertainty) are acceptable following Step 3A, the site will meet the conditions of the exit criterion specified in the Navy policy/guidance. If the Step 3A evaluation does not support a determination of acceptable risk within acceptable uncertainty, the site continues to Step 3B.

Step 3B of the Navy policy/guidance (problem formulation) corresponds conceptually to the last four activities listed above for Step 3 of the USEPA ERA guidance. In Step 3B, the preliminary conceptual model from the SERA is refined based upon the results of the Step 3A evaluation to develop a revised list of key receptors, critical exposure pathways, key COPCs, assessment endpoints, measurement endpoints, and risk hypotheses. Based upon the refined conceptual model, the lines of evidence to be used in characterizing risk are determined. Agreement on the refined conceptual model, COPCs, exposure pathways, endpoints, and risk hypotheses constitutes the SMDP at the end of Step 3 in both Navy and USEPA ERA guidance.

Following the completion of Step 3, a decision point is reached with two potential outcomes. If the refined risk estimates are acceptable for each selected assessment endpoint, the investigation proceeds to risk characterization (Step 7) to document this conclusion, and the ERA process terminates. If the uncertainties associated with the refined risk estimates are unacceptable and/or the risk estimates indicate that unacceptable risks may exist, site-specific studies might be required and the ERA process continues (Steps 4 through 6). Step 4 is a work planning step where additional site-specific studies are scoped and designed. Step 5 consists of the verification of the field sampling design developed in Step 4 while Step 6 constitutes the site investigation and data analysis phase of the process.

Step 7 consists of the documentation and synthesis of the information and data identified in Steps 1 through 3 (no additional study) or Steps 1 through 6 (additional study). In this step, risk is evaluated and characterized using both quantitative and qualitative methods. Conclusions are made as to whether or not there is a reasonable potential for unacceptable ecological risk, and if there is a potential for ecological risk, the magnitude of that risk. The results of the completed BERA (Step 7) are used to make any necessary risk management decisions (Step 8) related to current or future risks. Possible decisions include:

- There is adequate information to conclude that no unacceptable ecological risks exist. The assessment should stop at Step 7.
- There is adequate information to conclude that ecological risks warrant remedial action. Whether or not remedial actions are taken, and the specific actions taken, will depend upon a number of risk management factors such as the results of any human health risk assessments and the potential impact of the remedial action itself on the habitats and biota present. This analysis typically occurs as part of Step 8.
- There is not adequate information to estimate risk or the risk estimate is believed to be too conservative or uncertain to recommend remediation. The assessment should be refined.

8.2 Problem Formulation

Problem formulation establishes the goals, scope, and focus of the ERA. As part of problem formulation, the ecological setting of Sites 8 and 34 is characterized in terms of the habitats and biota known or likely to be present. The types and concentrations of chemicals that are present in ecologically relevant media (surface water and sediment) are also described based upon available analytical data. A conceptual model is developed that describes source areas, transport pathways and exposure media, exposure pathways and routes, and receptors.

Assessment endpoints, measurement endpoints, and risk hypotheses are developed to evaluate those receptors for which critical exposure pathways exist. The fate, transport, and toxicological properties of the chemicals present on Sites 8 and 34, particularly the potential for bioaccumulation, are also considered during this process.

8.2.1 Environmental Setting

Site 8 is located in the east-central part of WPNSTA Yorktown (**Figure 2-1**). The site is located along the Eastern Branch of Felgates Creek, just downstream of Site 34 and about 1.5 miles from the confluence of the creek with the York River. The site is located off of Manley Road near Building 456 and consists of a 300-ft drainage way and its surrounding area. The Site 8 discharge area received wastewater from the NEDED complex (Building 456) from 1940 until 1986. Prior to 1975, the wastewater reportedly contained solvents, spent/neutralized acids, and explosives. After 1975, a carbon adsorption tower was used to treat the contaminated wastewater prior to discharge into the drainage area. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to the HRSD treatment facility. Contaminated soil and drainage channel sediments at the site were excavated in 2007.

The eastern part of Site 8 consists of a paved parking lot. The western part of the site around the drainage channel is wooded. Most of the site is relatively flat with the exception of the drainage channel itself, which is situated in a ravine with steeply sloping sides and has reverted to a natural drainage with wetland vegetation present. Three wetland forbs dominate the area, sensitive fern (*Onoclea sensibilis*), water pennywort (*Hydrocotyle americana*), and clearweed (*Pilea pumila*) (Baker, 2004). The drainage channel leads to an estuarine, intertidal, emergent wetland along Felgates Creek that is dominated by smooth cordgrass (*Spartina alterniflora)*. Surface water runoff at the site flows into the drainage channel and then to the Eastern Branch of Felgates Creek. Groundwater generally flows westward toward Felgates Creek and the drainage channel.

Site 34 is approximately 0.4 acres and is located in the north-central part of WPNSTA Yorktown (**Figure 2-1**). A one-lane asphalt road encircles Buildings 460, 459, 537, 458, and 651, which are concrete bunkers set into a hillside. South of the road, the sparsely wooded terrain slopes steeply to a flat wetland area north of the main channel of the Eastern Branch of Felgates Creek. Groundwater and surface runoff flows south toward the Eastern Branch of Felgates Creek.

Site 34 consists of a historic pipe that originates at Building 537 and extends south to the Eastern Branch of Felgates Creek. Nitramine-contaminated wastewater was reportedly discharged through the pipe in the past. Contaminated soils and sediments within the drainage channel were removed in 2007 to mitigate potential unacceptable human health and ecological risks.

The Eastern Branch of Felgates Creek is tidal and estuarine, with measured salinities of between 2 and 40 parts per thousand (ppt) near the sites (typically between 17 and 19 ppt) and between 5 and 28 ppt further upstream (where the background samples were collected) (**Table 8-1**). The pH of the water varies between about 6.5 and 8.5. Substrates are composed mostly of fines (silt/clay). TOC ranged from about 2.5 percent to about 7 percent. The pH is near neutral, ranging from 6.5 to 7.4 (**Table 8-2**). SEM/AVS ratios, a measure of the bioavailability of certain metals, only exceed one where sulfides are low (**Table 8-2**).

The downgradient portions of the Site 34 discharge area are inundated from the Eastern Branch of Felgates Creek at high tide. The Eastern Branch of Felgates Creek flows due west in the vicinity of Site 34. Approximately 250 ft downstream, the creek abruptly turns northward towards Site 8. Wetlands composed of salt-tolerant species edge Felgates Creek in the vicinity of both sites. The vegetative community supported downgradient of the Site 34 discharge pipe and downgradient of Site 8 is characteristic of estuarine creeks, dominated by smooth cordgrass (*Spartina alterniflora*), edged by bayberry (*Myrica cerifera*) (Baker, 2004).

Invertebrate species observed and expected in the estuarine aquatic habitat offered by the creek and wetlands include mussels, marsh periwinkles, mud crabs, fiddler crabs, oysters, amphipods, and worms. Small fish, including minnows, anchovy, and mosquito fish, are likely abundant in the channels within the wetlands, and are probably found throughout the wetland at high tide. The Eastern Branch of Felgates Creek and the surrounding marshes additionally have the potential to support a wide range of avian, mammalian, and reptilian upper trophic level species (Baker, 2004).

There are no known occurrences of rare, threatened, or endangered species, or sensitive habitats, on or in the immediate vicinity of Sites 8 and 34 (Baker, 2004).

8.2.2 Summary of Analytical Data

Only samples collected as part of this RI (in 2007 and 2008) are considered in this ERA. These include eight collocated surface water and sediment samples from the Eastern Branch of Felgates Creek near the sites (two of the sample locations at Site 34 that extended into the vegetated wetland area bordering the creek and adjacent to [south of] the site were not used in the ERA; see Section 6), and 6 collocated surface water and sediment samples collected from upgradient portions the creek (used as background). The samples used in this ERA are listed in **Table 8-3** and are shown on **Figure 6-1**. Groundwater data collected as part of this RI were not directly evaluated in this ERA but were considered qualitatively. All of the data collected as part of this RI and used in this ERA were documented as part of the final work plan for this RI (CH2M HILL, 2007). The data collected previously as part of the Rounds 1 and 2 RIs were not considered due to their age (2000 or earlier). Because of the past remedial actions that have occurred in the terrestrial portions of these sites to address contaminant sources (which also extended into the vegetated wetland areas bordering each site), an evaluation of terrestrial and vegetated wetland habitats (soil data) is not relevant to this ERA.

8.2.3 Conceptual Model

The conceptual model relates potentially exposed receptor populations with potential source areas based upon physical site characteristics and complete exposure pathways. Important components of the conceptual model are the identification of potential source areas, transport pathways, exposure media, exposure pathways and routes, and receptors. Actual or potential exposures of ecological receptors associated with a site are determined by identifying the most likely, and most important, mechanisms and pathways of contaminant release and transport. A complete exposure pathway has three components:

- A source of chemicals that results in a release to the environment;
- A pathway of chemical transport through an environmental medium; and
- An exposure or contact point for an ecological receptor.

Figure 8-1 illustrates a diagrammatic conceptual model for Sites 8 and 34. Key components of this conceptual model are discussed in the following subsections.

Source Areas

Removal actions have occurred at each site to address source areas, which have been eliminated. While this has addressed the primary source areas and terrestrial/vegetated wetland habitats at the sites, groundwater, and past potential transport to adjacent aquatic water bodies (Eastern Branch of Felgates Creek), have not yet been directly addressed. These media are the subject of this RI.

Transport Pathways and Exposure Media

A transport pathway describes the mechanisms whereby site-related chemicals, once released, may be transported from a source to ecologically relevant media (such as surface water) where exposures may occur. These transport pathways are shown on **Figure 8-1**.

The primary release mechanisms and transport pathways at the sites include:

- Infiltration, percolation, and leaching of contaminants to groundwater and subsequent discharge to the surface water and sediment of the adjacent creek.
- Historical surface runoff to the surface water and sediment of the adjacent creek.
- Uptake from the surface water and sediment of the adjacent creek and accumulation in the tissues of aquatic biota.

Concentration gradients from potential source areas through the appropriate pathway(s) are evaluated in order to determine if there are any links between site contamination and potential ecological receptors (habitats and biota).

Exposure media for ecological receptors are typically limited to surface water, surface sediment, and surface soil. Surface soil is not evaluated in this ERA based upon past remedial actions, which have eliminated these potential exposure pathways. Groundwater is generally considered only as a transport medium since there are no ecological exposures to groundwater until it discharges to a water body or surfaces as a seep. Air is not addressed in this ERA since this medium is not likely to result in significant contributions to total exposures.

Exposure Pathways and Routes

An exposure pathway links a source of contamination with one or more receptors through exposure via one or more media and exposure routes. Exposure, and thus potential risk, can only occur if complete exposure pathways exist. **Figure 8-1** shows the potentially complete exposure pathways to ecological receptors associated with Sites 8 and 34 which include:

- Direct contact with site-related chemicals in surface water and sediment by aquatic and benthic organisms

- Potential ingestion of site-related chemicals via the food chain by avian and mammalian aquatic receptors

As discussed previously, there are no complete exposure pathways for terrestrial and wetland receptors.

An exposure route describes the specific mechanism(s) by which a receptor is exposed to a chemical present in an environmental medium. The most common exposure routes are dermal contact, direct uptake, ingestion, and inhalation. Unrooted, floating aquatic plants, rooted submerged vascular aquatic plants, and algae may be exposed to chemicals directly from the water or (for rooted plants) from sediment. Aquatic invertebrates may be exposed to chemicals in surface sediment and/or surface water through dermal contact and ingestion.

Animals may be exposed to chemicals through the:

- Inhalation of gaseous chemicals or of chemicals adhered to airborne particulate matter
- Incidental ingestion of contaminated abiotic media (sediment) during feeding or preening activities
- Ingestion of contaminated water
- Ingestion of contaminated plant and/or animal tissues for chemicals that have entered food webs
- Dermal contact with contaminated abiotic media

These routes, where applicable, are depicted on **Figure 8-1**.

The contribution to the total dose from the inhalation route is generally insignificant for upper trophic level ecological receptors relative to ingestion pathways. Hence, the air pathway is not generally considered for ecological receptors. Exposure to chemicals present in sediment via dermal contact may occur but is unlikely to represent a major exposure pathway for most upper trophic level receptors because fur, feathers, and chitinous exoskeletons minimize transfer of chemicals across dermal tissue. Incidental ingestion of surface sediment during feeding, preening, or grooming activities is, however, considered in the risk estimates. Direct contact is considered for lower trophic level receptors (benthic invertebrates).

Direct ingestion of drinking water is only considered when the salinity is below 15 ppt, the approximate toxic threshold for wildlife receptors (Humphreys, 1988). Based upon available data (**Table 8-1**), the salinity in the creek is typically above this threshold. Thus, exposure via direct ingestion of drinking water is not included in this ERA.

Receptors

Because of the complexity of natural systems, it is generally not practical to directly assess the potential impacts to all ecological receptors present within an area. Therefore, specific receptor species (e.g., great blue heron) or species groups (e.g., fish) are often selected as surrogates to evaluate potential risks to larger components of the ecological community

(guilds; such as piscivorous birds) used to represent the assessment endpoints (e.g., survival and reproduction of piscivorous birds). Selection criteria typically include those species that:

- Are known to occur, or are likely to occur, in the area.
- Have a particular ecological, economic, or aesthetic value.
- Are representative of taxonomic groups, life history traits, and/or trophic levels in the habitats present for which complete exposure pathways are likely to exist.
- Can, because of toxicological sensitivity or potential exposure magnitude, be expected to represent potentially sensitive populations.

The following upper trophic level receptor species have been chosen for exposure modeling based upon the criteria listed above:

- **Belted kingfisher (*Ceryle alcyon*)**—Semi-aquatic avian piscivore/invertivore
- **Great blue heron (*Ardea herodias*)**—Semi-aquatic avian piscivore
- **Mallard (*Anas platyrhynchos*)**—Semi-aquatic avian omnivore
- **Marsh wren (*Cistothorus palustris*)**—Semi-aquatic avian insectivore
- **Mink (*Mustela vison*)**—Semi-aquatic mammalian piscivore
- **Muskrat (*Ondatra zibethicus*)**—Semi-aquatic mammalian herbivore
- **Raccoon (*Procyon lotor*)**—Semi-aquatic mammalian omnivore

Upper trophic level receptor species quantitatively evaluated in this ERA were limited to birds and mammals, the taxonomic groups with the most available information regarding exposure and toxicological effects. Lower trophic level receptor species were evaluated based upon those taxonomic groupings for which medium-specific screening values have been developed. As such, specific species of aquatic biota were not chosen as receptors because of the limited information available for specific species and because aquatic biota (fish and benthic invertebrates) are evaluated on a community level via a comparison of surface water and sediment concentrations with medium-specific screening values.

Amphibians are typically selected as a receptor group only when freshwater aquatic or wetland habitats are present on, or in the contaminant transport pathways (as defined in the conceptual model) of, a site, which is not typically the case at Sites 8 and 34 based upon the salinity of the creek. Because of the limited amount of toxicological data available for reptiles, exposures via the food web for this taxonomic group were evaluated using bird and mammal receptor species as surrogates. Similarly, potential risks to reptiles from direct exposures to surface water and sediment are evaluated using screening values developed for other taxonomic groups (described above).

Endpoints and Risk Hypotheses

The conclusion of the problem formulation includes the selection of ecological endpoints and risk hypotheses, which are based upon the conceptual model. Two types of endpoints, assessment endpoints and measurement endpoints, are defined as part of the ERA process (USEPA, 1997a). An assessment endpoint is an explicit expression of the environmental component or value that is to be protected. A measurement endpoint is a measurable ecological characteristic that is related to the component or value chosen as the assessment endpoint. The considerations for selecting assessment and measurement endpoints are

summarized in USEPA (1997a) and discussed in detail in Suter (1989, 1990, 1993). Risk hypotheses are testable hypotheses about the relationship among the assessment endpoints and their predicted responses when exposed to contaminants.

Endpoints define ecological attributes that are to be protected (assessment endpoints) and measurable characteristics of those attributes (measurement endpoints) that can be used to gauge the degree of impact that has or may occur. Assessment endpoints most often relate to attributes of biological populations or communities, and are intended to focus the risk assessment on particular components of the ecosystem that could be adversely affected by chemicals attributable to a site (USEPA, 1997a). Assessment endpoints contain an entity (e.g., heron population) and an attribute of that entity (e.g., survival rate). Individual assessment endpoints usually encompass a group of species or populations (the receptor) with some common characteristic, such as specific exposure route or contaminant sensitivity, with the receptor then used to represent the assessment endpoint in the risk evaluation.

Assessment and measurement endpoints may involve ecological components from any level of biological organization, from individual organisms to the ecosystem itself. Effects on individual organisms are important for some receptors, such as rare and endangered species; population- and community-level effects are typically more relevant to ecosystems. Population- and community-level effects are usually difficult to evaluate directly without long-term and extensive study. However, measurement endpoint evaluations at the individual level, such as an evaluation of the effects of chemical exposure on reproduction, can be used to predict effects on an assessment endpoint at the population or community level. In addition, use of criteria values designed to protect the majority of the components of a community (e.g., Ambient Water Quality Criteria [AWQC] for the Protection of Aquatic Life) can be useful in evaluating potential community- and/or population-level effects.

Table 8-4 shows the assessment endpoints, risk hypotheses, and measurement endpoints used in the ERA. **Table 8-4** also shows the receptors associated with each endpoint.

8.3 Exposure Assessment

The principal activity associated with the exposure assessment is the estimation of chemical concentrations in applicable media, termed EPCs, to which the receptors may be exposed. This is accomplished through the selection of appropriate sets of the available analytical data using a set of criteria (e.g., validation status, sampling date). Once the analytical data sets are selected, EPCs are calculated as a particular point on the distribution of concentrations. At the screening level, the EPC is the maximum detected concentration. At the baseline level, EPCs are typically central tendency estimates (e.g., arithmetic mean). EPCs are then used in bioaccumulation and food web models to estimate exposures to upper trophic level receptors.

8.3.1 Selection Criteria for Analytical Data

Available analytical data (described in Section 8.2.2) were selected for use in the ERA based upon the following:

- Data must have been validated by a qualified data validator using acceptable data validation methods. Rejected (R) values were not used in the ERA. Unqualified data and

data qualified as J (estimated), L (biased low), or K (biased high) were treated as detected. Data qualified as U (undetected) or B (blank contamination) were treated as non-detected.

- For samples with duplicate analyses, the higher of the two concentrations was used when both values were detects or when both values were non-detects. In cases where one result was a detection and the other a non-detect, the detected value was used in the assessment.

8.3.2 Exposure Point Concentrations

EPCs are calculated as a particular point on the distribution of concentrations. At the screening level, the EPC is the maximum detected concentration. At the baseline level, EPCs are typically central tendency estimates (e.g., median, geometric mean, or arithmetic mean), which provide a more representative estimate of potential exposures and risks to receptor populations (the focus of the selected assessment endpoints). In this ERA, the maximum, arithmetic mean, 95 percent UCL of the arithmetic mean, and geometric mean concentrations were evaluated for direct exposures. Exposures via food webs utilized the maximum, arithmetic mean, and 95 percent UCL of the arithmetic mean. These three medium-specific EPCs were used in bioaccumulation and food web models to estimate exposures to upper trophic level receptors. Dietary items for which tissue concentrations were modeled included aquatic plants, benthic invertebrates, and fish. Incidental ingestion of sediment, but not ingestion of drinking water (due to the salinity of the creek), was included when calculating the total exposure. The models and parameter values used for calculating these tissue concentrations are outlined in the following subsections.

Not all chemicals were evaluated for food web exposures. Only those chemicals with the potential to bioaccumulate were evaluated for exposures via food webs. This list of bioaccumulating chemicals is provided in **Table 8-5** for relevant constituents and is based upon the list provided in Table 4-2 of USEPA (2000).

For initial (screening) exposure estimates, the uptake of chemicals from the abiotic media into these food items was based upon conservative (e.g., 90th percentile) bioconcentration factors (BCFs) or bioaccumulation factors (BAFs) from the literature, where available. The use of 90th percentile values is generally recommended to provide for a conservative screening assessment (Sample et al. 1998a, 1998b; Bechtel Jacobs 1998). BCFs and BAFs used for baseline exposure estimates were based upon, or modeled from, central tendency estimates (e.g., median or mean). For mean values, arithmetic means were used for normally distributed parameters; when the distribution was log-normal, the geometric mean was used. Default factors of 1.0 were used only when data were not available for a chemical in the literature.

In the BERA, using central tendency estimates (rather than high-end values or maximums) for exposure parameters such as BAFs provides a more representative estimate of potential exposures and risks to populations (the focus of the assessment endpoints) of upper trophic level receptors. Since these upper trophic level receptors are highly mobile, they would be expected to effectively average their exposure over time as they forage within the area defining their home range. Average prey concentrations are most appropriately estimated using central tendency estimates of media concentrations and accumulation factors. For

example, the wildlife dietary exposure models contained in the *Wildlife Exposure Factors Handbook* (USEPA, 1993c) specify the calculation of an average daily dose. Increasing the representativeness of the exposure estimates relative to population-level effects is consistent with the intent of a BERA. In cases where adequate spatial sampling coverage exists, mean concentrations are also appropriate for evaluating potential risks to populations of lower trophic level receptors because the members of the population are expected to be found throughout an area (where suitable habitat is present), rather than concentrated in one particular location. While effects to individual organisms might be important for some receptors, such as rare and endangered species, population- and community-level effects are typically more relevant to ecosystems.

Aquatic Plants

Tissue concentrations in the above-ground vegetative portion of aquatic plants were estimated by multiplying the sediment concentration (maximum for the SERA, and mean and 95% UCL for the BERA) for each chemical by chemical-specific soil-to-plant BCFs (extrapolated to sediments) obtained from the literature. These BCFs are listed in **Tables 8-6** (screening) **and 8-7** (baseline).

The BCF values were based upon root uptake from sediment and upon the ratio between dry-weight sediment and dry-weight plant tissue. Literature values based upon the ratio between dry-weight sediment and wet-weight plant tissue were converted to a dry-weight basis by dividing the wet-weight BCF by the estimated solids content for plants (15 percent [0.15]; Sample et al., 1997).

Benthic Invertebrates

Tissue concentrations in benthic invertebrates were estimated by multiplying the sediment concentration (maximum for the SERA, and mean and 95% UCL for the BERA) for each chemical by chemical-specific sediment-to-invertebrate BAF values obtained from the literature. These values are listed in **Tables 8-6** (screening) **and 8-7** (baseline).

The BAF values used were based upon the ratio between dry-weight sediment and dry-weight invertebrate tissue. BAFs based upon depurated analyses (sediment was purged from the gut of the organism prior to analysis) were given preference over undepurated analyses when selecting BAF values because direct ingestion of sediment was accounted for separately in the food web model.

Literature values based upon the ratio between dry-weight sediment and wet-weight invertebrate tissue were converted to a dry-weight basis by dividing the wet-weight BAF by the estimated solids content for benthic invertebrates (21 percent [0.21]; USEPA, 1993c). For chemicals without available literature-based sediment-to-invertebrate BAFs, a BAF of 1.0 was assumed.

Fish

Tissue concentrations in whole-body fish were estimated by multiplying the sediment concentration for each chemical by chemical-specific sediment-to-fish BAFs obtained from the literature. These BAFs are listed in **Tables 8-6** (screening) **and 8-7** (baseline).

The BAF values used were based upon the ratio between dry-weight sediment and dry-weight tissue. Literature values based upon the ratio between dry-weight sediment and

wet-weight fish tissue were converted to a dry-weight basis by dividing the wet-weight BAF by the estimated solids content for fish (25 percent [0.25]; USEPA, 1993c). For chemicals without literature-based sediment-to-fish BAFs, a BAF of 1.0 was assumed.

Dietary Intakes

Upper trophic level receptor exposures via food webs to chemicals present in surface sediment were determined using estimated chemical concentrations in each relevant dietary component for each receptor, as described in the previous section. Incidental ingestion of surface sediment was also included when calculating the total exposure.

Dietary intakes for each upper trophic level receptor were calculated using the following formula (modified from USEPA, 1993c):

$$DI_x = \frac{[[\sum_i (FIR)(FC_{xi})(PDF_i)] + [(FIR)(SC_x)(PDS)] + [(WIR)(WC_x)]]}{BW}$$

where:

DI_x	=	Dietary intake for chemical x (mg chemical/kg body weight/day)
FIR	=	Food ingestion rate (kg/day, dry-weight)
FC_{xi}	=	Concentration of chemical x in food item i (mg/kg, dry-weight)
PDF_i	=	Proportion of diet composed of food item i (dry-weight basis)
SC_x	=	Concentration of chemical x in sediment (mg/kg, dry-weight)
PDS	=	Proportion of diet composed of sediment (dry-weight basis)
WIR	=	Water ingestion rate (L/day)
WC_x	=	Concentration of chemical x in water (mg/L)
BW	=	Body weight (kg, wet-weight)

Incidental ingestion of sediment was modeled as a dietary component rather than using a separate sediment ingestion rate. Parameter values for the selected receptors are listed in **Tables 8-8** (screening) **and 8-9** (baseline). When measured food ingestion rates were not available for a receptor from the literature, the rates were estimated using allometric equations from Nagy (2001).

The exposure parameter values were selected to provide for a conservative evaluation in the initial screening. Examples of these conservative assumptions include:

- All of the dietary items consumed by the receptor are obtained from the portion of the creek adjacent to the sites (i.e., an Area Use Factor [AUF] of one is assumed) at the point of maximum concentration.
- Chemicals are 100 percent bioavailable.
- Maximum food ingestion rates are used (calculated maximum ingestion rates using allometric equations were based upon the maximum adult body weight).
- Minimum adult body weights are used.

For the refined baseline estimates:

- Central tendency estimates (e.g., mean, median, or midpoint) for body weight and ingestion rates were used. Central tendency estimates for these exposure parameters are

more relevant for a BERA because they better represent the characteristics of a greater proportion of the individuals in the population. Populations or communities (rather than individual organisms) were emphasized when developing the assessment endpoints for the ERA.

8.4 Effects Assessment

The effects assessment defines the methods and data used to define an adverse ecological effect. For this ERA, effects data are available from multiple lines of evidence, as follows:

- **Screening Values for Surface Water and Sediment**—Analytical data are compared to literature-based surface water and sediment screening values.
- **Screening Values for Ingestion Exposures**—Food web exposure estimates are compared to literature-based ingestion-based screening values for upper trophic level receptors.
- **Bioavailability Measures**—Additional data were collected to help evaluate chemical-specific bioavailability in abiotic media.

8.4.1 Medium-Specific Screening Values

Medium-specific screening values were established for each ecologically relevant medium and chemical analyzed. Based upon the conceptual model (**Figure 8-1**), direct exposure to surface water and sediment are potentially complete pathways. The screening values used in the ERA considered Region 3 BTAG screening values (USEPA, 2006b) as well as additional screening values available in the literature. When more than one screening value was available (e.g., fauna and flora) and chemical, the lowest of these values was selected. Because the salinity of the principal water body adjacent to the sites (Eastern Branch of Felgates Creek) typically exceeded 15 ppt, marine screening values were used when available; freshwater values were used when marine values were lacking. The values used in the ERA are summarized, by medium, in **Table 8-10**.

For surface water, the screening values for chemicals known to bioaccumulate in aquatic food webs were based upon the final chronic value (rather than the final residue value) as per USEPA (1996b, 2006a) and Suter and Tsao (1996). The use of final chronic values is intended to protect aquatic receptors from direct exposures to chemicals in surface water, rather than from exposure via food webs. Potential risks to upper trophic level receptors from food web exposures (tissue residues) were evaluated separately using the ingestion-based screening values outlined in Section 8.4.2.

8.4.2 Ingestion Screening Values

Ingestion screening values for dietary exposures were derived for each bioaccumulative chemical evaluated in the ERA. Screening values were derived for both mammalian and avian receptors, the only two taxonomic groups for which sufficient toxicological information was generally available for the range of chemicals evaluated. Toxicological information from the literature for wildlife species most closely related to the receptor species were used, where available, but were supplemented by laboratory studies of non-wildlife species (e.g., laboratory mice) where necessary. The ingestion screening values are

expressed as milligrams of the chemical per kilogram body weight of the receptor per day (mg/kg-BW/day).

Survival, growth, and reproduction were emphasized as toxicological endpoints because they are the most relevant, ecologically, to maintaining viable populations and because they are generally the most studied toxicological endpoints for ecological receptors. If several chronic toxicological studies were available from the literature, the most appropriate study was selected for each receptor species based upon study design, study methodology, study duration, study endpoint, and test species.

Ingestion screening values were derived for both chronic NOAEL and chronic LOAEL endpoints. The applicable uncertainty factors from **Table 8-11** were applied to derive these screening values, where necessary. Because there are no threatened or endangered species known to occur in the Sites 8 and 34 area, the application of additional uncertainty factors for this class of receptors is not applicable to the ERA. Taxonomic class-type uncertainty factors were also not applied because the values in **Table 8-11** were typically derived based upon data from a broad range of taxonomic groups. Maximum Acceptable Toxicant Concentrations (MATCs), defined as the geometric mean of the NOAEL and LOAEL, were also calculated. Ingestion screening values for mammals and birds are summarized in **Tables 8-12 and 8-13**, respectively.

8.4.3 Bioavailability Measures

Data collected to evaluate the potential chemical-specific bioavailability in abiotic media included:

- **Sediment** - TOC, pH, AVS/SEM, and grain size.
- **Surface Water** - Dissolved metals and pH.

8.5 Risk Characterization

The risk characterization portion of the ERA uses the information generated during the three previous parts of the ERA (problem formulation, exposure assessment, and effects assessment) to estimate potential risks to ecological receptors. In addition to the lines of evidence that were described in Section 8.4, the following additional factors were considered during the risk characterization:

- **Essential Nutrients.** Calcium, magnesium, potassium, and sodium were excluded from consideration because they are essential macronutrients needed for normal metabolism, growth, and reproduction.

- **Background Concentrations.** Site-specific background surface water and sediment concentrations were derived from sampling locations collected from the upgradient portion of the Eastern Branch of Felgates Creek (**Figure 6-1**). Concentrations from samples collected adjacent to the sites were directly compared with samples collected from the upgradient portions of the creek.

8.5.1 Comparison With Screening Values

Surface water and sediment concentrations are compared with the corresponding screening values to derive risk estimates using the HQ method. HQs are calculated by dividing the

chemical concentration in the medium by the corresponding chemical-specific screening value. HQs exceeding one indicate the potential for unacceptable risk since the chemical concentration (exposure) exceeds the screening value (effect). HQs less than or equal to one indicate that unacceptable risks are unlikely. As discussed in Section 8.3.2, maximum, mean (arithmetic and geometric), and 95 percent UCL of the arithmetic mean concentrations from the 2007/2008 sampling are compared with screening values. Chemicals were excluded from further consideration if the HQ based upon the 95 percent UCL was less than one.

Surface Water

Maximum surface water concentrations are compared to screening values in **Table 8-14**. Based upon this comparison for unfiltered samples, four metals (aluminum, barium, iron, and silver) had HQs exceeding one based upon detected concentrations. Only aluminum and barium, plus copper, exceeded screening values in filtered samples based upon maximum detected concentrations. No organic chemical exceeded screening values based upon a maximum detected concentration (**Table 8-14**).

Mean concentrations in surface water are compared with screening values in **Table 8-14**. Based upon this comparison for unfiltered samples, three metals (aluminum, barium, and silver) had 95 percent UCL-based HQs exceeding one based upon detected concentrations. Only aluminum and barium, plus copper, exceeded screening values in filtered samples based upon 95 percent UCL detected concentrations. No organic chemical exceeded screening values based upon a 95 percent UCL detected concentration (**Table 8-14**).

Bioavailability Considerations USEPA (1996b) indicates that the dissolved metal fraction should be preferentially used to the total metal fraction in surface water evaluations because dissolved metal concentrations best represent the bioavailable fraction. High levels of suspended solids and sediment-adsorbed metals, which could be present in unfiltered samples, could result in overstating bioavailable surface water concentrations and thus potential exposures and risks. Almost all of the surface water samples were turbid to varying degrees (**Table 8-1**). Thus, the filtered (dissolved) samples better represent potential aquatic exposures. Only aluminum, barium, and copper exceeded screening values in filtered samples based upon 95 percent UCL detected concentrations. Thus, aluminum, barium, and copper were identified as COPCs in surface water.

Surface Sediment

Maximum sediment concentrations are compared to screening values in **Table 8-15**. Based upon this comparison, seven metals (aluminum, arsenic, cobalt, manganese, mercury, silver, and vanadium) had HQs exceeding one based upon detected concentrations. Beryllium was detected but a screening value was not available. Carbon disulfide was the only organic chemical that exceeded screening values based upon maximum detected concentrations. Acetone was detected but a screening value was not available.

Mean concentrations in sediment are compared with screening values in **Table 8-15**. Based upon this comparison, four metals (aluminum, arsenic, manganese, and silver) had 95 percent UCL-based HQs exceeding one based upon detected concentrations. Carbon disulfide was the only organic chemical that exceeded screening values based upon a 95 percent UCL detected concentration (**Table 8-15**).

Bioavailability Considerations SEM/AVS ratios were below one in all site samples with detectable SEM (all but YS08-SD02-1207, YS08-SD04-1207, and YSA14-SD03-1207; **Table 8-2**), which suggests that the bioavailability of AVS metals is limited in most areas of the site. However, aluminum, arsenic, and manganese are not AVS metals. The screening value for carbon disulfide is equilibrium partitioning-based and was normalized to 1 percent TOC for the screen. Mean TOC for site samples was approximately 5 percent (**Table 8-15**). However, the 95 percent UCL-based HQ for carbon disulfide was greater than five, so this chemical would still exceed if the screening value was based upon a TOC value of 5 percent. Thus, aluminum, arsenic, manganese, silver, and carbon disulfide were identified as COPCs in sediment, as were beryllium and acetone, which were detected but lacked screening values.

8.5.2 Food Web Exposures

Exposure doses (based upon the maximum, arithmetic mean, and 95 percent UCL concentrations) for upper trophic level receptors from exposures via the food web are compared with the corresponding ingestion-based screening values to derive risk estimates using the HQ method. HQs are calculated by dividing the exposure dose by the corresponding chemical- and receptor-specific screening value. HQs exceeding one indicate the potential for unacceptable risk since the dose (exposure) equals or exceeds the screening value (effect). HQs less than one indicate that unacceptable risks are unlikely. Chemicals were excluded from further consideration if the HQ based upon the 95 percent UCL was less than one based upon the MATC.

HQs based upon maximum exposure doses for each upper trophic level receptor are listed in **Table 8-16**. Based upon a comparison to NOAELs, arsenic, chromium, lead, mercury, selenium, zinc, and hexachlorobenzene had HQs exceeding one for one or more receptors. The exceedances for selenium and hexachlorobenzene were based upon maximum reporting limits. Ingestion screening values were not available for any receptor for 4-bromophenyl-phenylether and 4-chlorophenyl-phenylether, neither of which was detected in surface water or sediment.

HQs based upon arithmetic mean exposure doses for upper trophic level receptors are listed in **Table 8-17**. Based upon a comparison to NOAELs, only chromium (marsh wren), mercury (belted kingfisher), and zinc (marsh wren) had HQs exceeding one. HQs did not exceed one based upon the LOAEL or the MATC for any receptor.

HQs based upon 95 percent UCL exposure doses for upper trophic level receptors are listed in **Table 8-18**. Based upon a comparison to NOAELs, chromium (marsh wren), mercury (marsh wren and belted kingfisher), selenium (marsh wren), zinc (marsh wren), and hexachlorobenzene (marsh wren) had HQs exceeding one (exceedances for selenium and hexachlorobenzene were based upon mean reporting limits). HQs did not exceed one based upon the LOAEL for any receptor. The HQ for selenium exceeded one (HQ of 1.09) based upon the MATC for the marsh wren. However, selenium was not retained as a COPC for food web exposures because selenium was not detected in site sediments. Thus, risks from food web exposures are considered acceptable.

8.5.3 Risk Evaluation

In this section, the various lines of evidence discussed in the previous section are integrated in order to evaluate the potential for unacceptable risks.

Surface Water

Three metals (aluminum, barium, and copper) were identified as COPCs in surface water (Section 8.5.1.1). To evaluate the potential significance of the screening value exceedances for these chemicals, site surface water concentrations were compared with site-specific background surface water concentrations (**Table 8-19**). The concentrations of aluminum and barium in unfiltered site samples were similar to concentrations in background samples indicating that these chemicals are present at background levels. Copper was not detected in unfiltered background samples but mean concentrations in site samples were similar to mean background concentrations (based upon one-half of the detection limit). In addition, the maximum HQ for copper in filtered samples was only 1.03 and copper was not detected in unfiltered samples (**Table 8-14**). Based upon this evaluation, no chemicals were identified as chemicals of concern (COCs) in surface water and risks from exposure to this medium are considered acceptable.

Sediment

Five metals (aluminum, arsenic, beryllium, manganese, and silver), acetone, and carbon disulfide were identified as COPCs in sediment (Section 8.5.1.2). As for surface water, site sediment concentrations were compared with site-specific background concentrations (**Table 8-20**). Based upon this comparison, concentrations in site samples were similar to concentrations in background samples for all COPCs, indicating that all of these chemicals are present at background levels. Based upon this evaluation, no chemicals were identified as COCs in sediment and risks from exposure to this medium are considered acceptable.

Food Web Exposures

Only selenium had a MATC HQ exceeding one based upon the 95 percent UCL exposure dose. However, selenium was not considered a COC for food web exposures because selenium was not detected in site sediments. Thus, risks from food web exposures are considered acceptable.

8.5.4 Risk Summary and Conclusions

No COCs were identified for surface water or sediment at Sites 8 and 34. Similarly, no COCs were identified for food web exposures. Thus, risks to ecological receptors are considered acceptable. Source areas at these sites have been removed and groundwater is not a significant continuing source to the aquatic habitats adjacent to these sites. No further action is recommended for ecological receptors at these two sites.

8.6 Uncertainties

Uncertainties are present in all risk assessments because of the limitations of the available data and the need to make certain assumptions and extrapolations based upon incomplete information. The uncertainties in this ERA are mainly attributable to the following factors:

- **Reporting Limits—**Reporting limits for some undetected analytes exceeded applicable screening values in some media. **Table 8-21** summarize these constituents, by medium, and reports both the ratio of the minimum and maximum reporting limits to the screening value as well as the ratio of the mean value (calculated using one-half of the reporting limit for each sample) to the screening value. Because these constituents were not detected, they are not known to be present on the site but the potential for unacceptable risks cannot be totally discounted because the reporting limits are higher than the screening values. The magnitude of the ratios can be used to qualitatively evaluate the magnitude of the associated uncertainty (e.g., there is more uncertainty in terms of the potential for risk for a ratio of 100 relative to a ratio of 10). In surface water, mean reporting limits for these chemicals were generally less than ten times screening values. The main exceptions were the PCB Aroclors and several SVOCs. Based upon their chemical properties, all of these chemicals are likely to be retained in sediments and not be present in appreciable quantities in the water column. Screening values for these chemicals were generally comparable to, or below, reporting limits in sediments (when equilibrium partitioning-based values were considered). In sediment, mean reporting limits exceeded screening values for a number of chemicals although almost always by a factor of five or less for metals, pesticides, PCBs, and VOCs. Mean reporting limits were elevated for a number of SVOCs and explosives. If equilibrium partitioning-based values were considered, or the existing equilibrium partitioning-based values were adjusted to the mean site-specific TOC (about 5 percent), mean reporting limits would rarely exceed 10 times screening values.

  In summary, there were relatively few chemicals with very high mean ratios, suggesting that the associated uncertainties are relatively low. Because standard analytical methods were used and the sample reporting limits were not elevated relative to the method reporting limits for the vast majority of samples and analytes, these uncertainties are considered acceptable and are unlikely to impact the conclusions of the ERA.

- **Duplicate Analyses—**When evaluating samples with field duplicates, the value used in the ERA was always the detect when one result was a detect and the duplicate was a non-detect, regardless of whether or not the non-detected value was higher. In these cases, the use of the detect has less uncertainty since it represents an actual measured value (versus an upper limit bound) and the two samples will have identical or similar reporting limits.

- **Selection of COPCs—**Chemicals without available screening values for a medium were not retained as COPCs unless they were detected. These uncertainties are unlikely to impact the conclusions of the ERA since these chemicals are not known to be present on the site.

- **Ingestion Screening Values—**Data on the toxicity of many chemicals to the receptor species were sparse or lacking, requiring the extrapolation of data from other wildlife species or from laboratory studies with non-wildlife species. This is a typical limitation and extrapolation for ERAs because so few wildlife species have been tested directly for most chemicals. The uncertainties associated with toxicity extrapolation were minimized through the selection of the most appropriate test species for which suitable toxicity data were available. The factors considered in selecting a test species to represent a receptor

species included taxonomic relatedness, trophic level, foraging method, and similarity of diet. It is difficult to predict if these extrapolations would result in overestimating or underestimating potential risks.

- A second uncertainty related to the derivation of ingestion screening values applies to metals. Most of the toxicological studies on which the ingestion screening values for metals were based used forms of the metal (such as salts) that have high water solubility and high bioavailability to receptors. Because the analytical samples on which site-specific exposure estimates were based measured total metal, regardless of form, and these highly bioavailable forms are expected to compose only a fraction of the total metal concentration, this is likely to result in an overestimation of potential risks for these chemicals but not to the extent that it would unduly impact the conclusions of the ERA.

- A third source of uncertainty related to the derivation of ingestion-based screening values applies to mercury and selenium. The ingestion-based screening values used for these two metals were based on organometallic (methylated) forms. Screening values for inorganic forms tend to be substantially higher. Given that inorganic forms likely contribute significantly to the total mercury and selenium, use of screening values based on organometallic forms tends to make the screening values for these metals extremely conservative and likely overestimates potential risk.

- **Chemical Mixtures—**Information on the toxicological effects of chemical interactions is generally lacking for ecological receptors, which required (as is standard for ERAs) that the chemicals be evaluated on a compound-by-compound basis during the comparison to screening values. This could result in an underestimation of risk (if there are additive or synergistic effects among chemicals) or an overestimation of risks (if there are antagonistic effects among chemicals).

- **Receptor Species Selection—**Reptiles were selected as receptors in the ERA, but were not evaluated quantitatively even when exposure pathways were likely to be complete. For food web exposures, this taxon was evaluated using other fauna (birds and mammals) as surrogates due to the general lack of taxon-specific toxicological data. This represents an uncertainty in the ERA.

  It was also assumed that any reptiles present in the aquatic habitats adjacent to the sites were not exposed to significantly higher concentrations of chemicals and were not more sensitive to chemicals than other receptor species evaluated in the ERA. This assumption was a source of uncertainty in the ERA. In addition, there is some uncertainty associated with the use of specific receptor species to represent larger groups of organisms (e.g., guilds).

- **Food Web Exposure Modeling—**Chemical concentrations in aquatic food items (plants, benthic invertebrates, and fish) were modeled from measured media concentrations and were not directly measured. The use of generic, literature-derived exposure models and bioaccumulation factors introduces some uncertainty into the resulting estimates. The values selected and methodology employed were intended to provide a conservative (SERA) or reasonable (Step 3A) estimate of potential food web exposure concentrations.

- Another source of uncertainty is the use of default assumptions for exposure parameters such as BCFs and BAFs. Although BCFs or BAFs for many bioaccumulative chemicals were readily available from the literature and were used in the ERA, the use of a default factor of 1.0 to estimate the concentration of some chemicals in receptor prey items is a source of uncertainty.
- Area use factors were assumed to equal one. This is a conservative assumption since a significant percentage of each upper trophic level receptor species' time could be spent foraging off-site in unimpacted areas or in areas where chemical concentrations are expected to be significantly lower.
- **Total Versus Dissolved Metals—**USEPA guidance (USEPA, 1996a) indicates that the dissolved metal fraction should be preferentially used to the total metal fraction in surface water screening. Both total and dissolved concentrations were used in the ERA for the surface water screen. High levels of suspended solids and sediment-adsorbed metals would result in overstating bioavailable surface water concentrations and thus potential exposures and risks.
- **Mean versus Maximum Media Concentrations—**As is typical in an ERA, a finite number of samples of environmental media are used to develop the exposure estimates. The maximum measured concentration provides a conservative estimate for immobile biota or those with a limited home range. The most realistic exposure estimates for mobile species with relatively large home ranges and for species populations (even those that are immobile or have limited home ranges) are those based upon the mean chemical concentrations in each medium to which these receptors are exposed. This is reflected in the wildlife dietary exposure models contained in the *Wildlife Exposure Factors Handbook* (USEPA, 1993c), which specify the use of average media concentrations. Given the mobility of the upper trophic level receptor species used in the ERA, the use of maximum chemical concentrations (rather than mean concentrations) in the SERA to estimate the exposure via food webs is very conservative. This conservatism was reduced to more realistic levels in the values selected for use in the BERA evaluation. The 95 percent UCL of the arithmetic mean was used quantitatively in the BERA portion of this ERA to represent the average exposure scenarios.
- **Comparisons to Background Concentrations—**Background concentrations were used to judge the site-relatedness of individual chemicals. If site concentrations were consistent with background levels, it was assumed that the concentrations were not related to known site-related source areas. There exists the possibility that concentrations below background were indeed site-related, rendering the assumption false. However the potential impact of this possibility is minimal since chemicals at concentrations consistent with background should exhibit no different ecological effects than commonly occurring in areas not affected by releases, regardless of their source.

Table 8-1
Water Column Parameter Measurements
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Area	Sample ID	Date	Flow (GPM)	Temperature (^{o}C)	pH	Conductivity (mS/cm)	Salinity (ppt)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (MV)
Creek	YS08-SW01-1207	12/11/2007	NS	16.4	7.91	29.2	18.0	20.0	9.74	185
Creek	YS08-SW02-1207	12/13/2007	NS	16.0	8.30	30.5	19.0	8.2	10.70	143
Creek	YS08-SW03-1207	12/13/2007	NS	16.1	8.11	30.7	19.0	10.2	10.62	151
Creek	YS08-SW04-1207	12/13/2007	NS	15.9	8.10	31.3	19.0	9.4	10.16	142
Creek	YSA14-SW01-1207	12/10/2007	NS	16.1	7.40	27.2	17.0	631	12.78	94
Creek	YSA14-SW02-1207	12/14/2007	NS	15.8	7.78	36.6	40.0	0	9.50	140
Creek	YSA14-SW03-1207	12/14/2007	NS	15.8	7.43	94.5	40.0	0	9.59	119
Wetland	YSA14-SW04-0308	3/5/2008	NS	16.8	6.65	3.75	2.0	29.6	6.00	180
Wetland	YSA14-SW04-1207	12/7/2007	NS	10.1	6.40	28.5	17.0	4.2	8.44	-9.0
Creek	YSA14-SW05-1207	12/14/2007	NS	15.6	6.40	29.2	18.0	0	9.29	229
Wetland	YSA14-SW06-0308	3/5/2008	NS	14.9	7.44	1.31	1.0	32.4	8.51	126
Wetland	YSA14-SW06-1207	12/7/2007	NS	9.30	7.61	14.1	8.0	8.6	7.75	162
Background - Creek	YBKG-SW01-1207	12/10/2007	NS	17.9	7.59	9.60	5.00	166	9.67	79
Background - Creek	YBKG-SW02-1207	12/14/2007	NS	15.9	8.01	36.5	22.0	0	9.67	165
Background - Creek	YBKG-SW03-1207	12/14/2007	NS	15.9	7.94	33.0	21.0	0	9.69	204
Background - Creek	YBKG-SW04-1207	12/11/2007	NS	15.4	6.39	32.0	20.0	25.6	11.30	216
Background - Creek	YBKG-SW05-1207	12/11/2007	NS	15.6	7.87	29.4	18.0	46.6	10.30	214
Background - Creek	YBKG-SW06-1207	12/14/2007	NS	16.0	8.00	4.56	28.0	0	9.91	209

NS - Not Sampled

Table 8-2
Physical Sediment Parameter Measurements
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Area	Sample ID	Date	Depth (inches)	Total Organic Carbon		pH	SEM/AVS Ratio	Grain Size (percent)				
				mg/kg	percent			Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt/ Clay
Creek	YS08-SD01-1207	12/11/2007	0-4	55,100	5.51	6.70	0.17	0.60	0.30	4.60	2.20	92.30
Creek	YS08-SD02-1207	12/13/2007	0-4	51,500	5.15	6.50	2.46 a	0.00	0.10	8.40	1.40	90.10
Creek	YS08-SD03-1207	12/13/2007	0-4	50,100	5.01	7.10	0.29	0.00	0.20	8.00	1.70	90.10
Creek	YS08-SD04-1207	12/13/2007	0-4	50,800	5.08	7.40	1.63 a	0.00	0.10	4.40	0.60	94.90
Creek	YSA14-SD01-1207	12/10/2007	0-4	63,200	6.32	7.00	0.70	0.00	1.20	11.60	2.60	84.60
Creek	YSA14-SD02-1207	12/14/2007	0-4	25,200	2.52	7.40	0.45	0.40	0.70	5.10	64.90	28.90
Creek	YSA14-SD03-1207	12/14/2007	0-4	53,700	5.37	6.90	2.30 a	0.50	0.20	6.70	5.70	86.90
Wetland	YSA14-SD04-1207	12/7/2007	0-4	66,200	6.62	7.10	0.18	0.00	10.40	8.80	1.70	79.10
Wetland	YSA14-SD04P-1207	12/7/2007	0-4	NS	NS	NS	0.09	NS	NS	NS	NS	NS
Creek	YSA14-SD05-1207	12/14/2007	0-4	34,800	3.48	7.40	0.22	0.00	0.20	4.20	2.00	93.60
Wetland	YSA14-SD06-1207	12/7/2007	0-4	56,200	5.62	6.90	0.55	0.00	0.60	5.50	1.70	92.20
Background - Creek	YBKG-SD01-1207	12/10/2007	0-4	32,400	3.24	7.30	0.28	1.10	0.70	11.20	9.10	77.90
Background - Creek	YBKG-SD01P-1207	12/10/2007	0-4	NS	NS	NS	0.24	NS	NS	NS	NS	NS
Background - Creek	YBKG-SD02-1207	12/14/2007	0-4	64,700	6.47	6.90	1.74 a	0.00	0.90	14.00	5.50	79.60
Background - Creek	YBKG-SD03-1207	12/14/2007	0-4	54,200	5.42	6.70	0.05	0.00	1.50	9.90	5.10	83.50
Background - Creek	YBKG-SD04-1207	12/11/2007	0-4	64,100	6.41	7.00	0.14	0.00	1.90	17.70	1.70	78.70
Background - Creek	YBKG-SD05-1207	12/11/2007	0-4	68,400	6.84	6.70	0.43	0.00	1.30	14.80	3.20	80.70
Background - Creek	YBKG-SD06-1207	12/14/2007	0-4	43,700	4.37	7.30	0.27	0.00	0.70	4.70	3.10	91.50

a - AVS not detected; one-half of the detection limit was used to calculate the ratio

NS - Not Sampled
Shaded cells indicate field duplicates

Table 8-3
Samples Used in the Ecological Risk Assessment
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	Sample ID	Sample Date	Depth	Area
Surface Water				
YS08-SW01	YS08-SW01-1207	12/11/2007	--	Site
YS08-SW02	YS08-SW02-1207	12/13/2007	--	Site
YS08-SW03	YS08-SW03-1207	12/13/2007	--	Site
YS08-SW04	YS08-SW04-1207	12/13/2007	--	Site
YSA14-SW01	YSA14-SW01-1207	12/10/2007	--	Site
YSA14-SW02	YSA14-SW02-1207	12/14/2007	--	Site
YSA14-SW03	YSA14-SW03-1207	12/14/2007	--	Site
YSA14-SW05	YSA14-SW05-1207	12/14/2007	--	Site
YBKG-SW01	YBKG-SW01-1207	12/10/2007	--	Background
YBKG-SW01	YBKG-SW01P-1207	12/10/2007	--	Background
YBKG-SW02	YBKG-SW02-1207	12/14/2007	--	Background
YBKG-SW03	YBKG-SW03-1207	12/14/2007	--	Background
YBKG-SW04	YBKG-SW04-1207	12/11/2007	--	Background
YBKG-SW05	YBKG-SW05-1207	12/11/2007	--	Background
YBKG-SW06	YBKG-SW06-1207	12/14/2007	--	Background
Sediment				
YS08-SD01	YS08-SD01-1207	12/11/2007	0-4	Site
YS08-SD02	YS08-SD02-1207	12/13/2007	0-4	Site
YS08-SD03	YS08-SD03-1207	12/13/2007	0-4	Site
YS08-SD04	YS08-SD04-1207	12/13/2007	0-4	Site
YSA14-SD01	YSA14-SD01-1207	12/10/2007	0-4	Site
YSA14-SD02	YSA14-SD02-1207	12/14/2007	0-4	Site
YSA14-SD03	YSA14-SD03-1207	12/14/2007	0-4	Site
YSA14-SD05	YSA14-SD05-1207	12/14/2007	0-4	Site
YBKG-SD01	YBKG-SD01-1207	12/10/2007	0-4	Background
YBKG-SD01	YBKG-SD01P-1207	12/10/2007	0-4	Background
YBKG-SD02	YBKG-SD02-1207	12/14/2007	0-4	Background
YBKG-SD03	YBKG-SD03-1207	12/14/2007	0-4	Background
YBKG-SD04	YBKG-SD04-1207	12/11/2007	0-4	Background
YBKG-SD05	YBKG-SD05-1207	12/11/2007	0-4	Background
YBKG-SD06	YBKG-SD06-1207	12/14/2007	0-4	Background

Shaded samples are field duplicates

Table 8-4
Assessment Endpoints, Risk Hypotheses, and Measurement Endpoints
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Assessment Endpoint	Risk Hypothesis	Measurement Endpoint	Receptor
Survival, growth, and reproduction of benthic invertebrate communities	Are site-related chemical concentrations in surface water and sediment sufficient to adversely effect benthic invertebrate communities?	Comparison of chemical concentrations in surface water and sediment with medium-specific screening values	Benthic invertebrates
Survival, growth, and reproduction of aquatic plant communities	Are site-related chemical concentrations in surface water and sediment sufficient to adversely affect aquatic plant communities?	Comparison of chemical concentrations in surface water and sediment with medium-specific screening values	Aquatic plants
Survival, growth, and reproduction of fish communities	Are site-related chemical concentrations in surface water and sediment sufficient to adversely effect fish communities?	Comparison of chemical concentrations in surface water and sediment with medium-specific screening values	Fish
Survival, growth, and reproduction of aquatic reptile populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to aquatic reptile populations?	Comparison of chemical concentrations in surface water and sediment with medium-specific screening values	Reptiles
		Evidence of potential risk to other upper trophic level aquatic receptors evaluated in the ERA	
Survival, growth, and reproduction of insectivorous bird populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to avian receptor populations that may consume benthic invertebrates from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Marsh wren
Survival, growth, and reproduction of piscivorous bird populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to avian receptor populations that may consume fish from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Great blue heron Belted kingfisher

Table 8-4
Assessment Endpoints, Risk Hypotheses, and Measurement Endpoints
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Assessment Endpoint	Risk Hypothesis	Measurement Endpoint	Receptor
Survival, growth, and reproduction of omnivorous bird populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to avian receptor populations that may consume aquatic prey from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Mallard
Survival, growth, and reproduction of herbivorous mammal populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to mammalian receptor populations that may consume aquatic plants from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Muskrat
Survival, growth, and reproduction of omnivorous mammal populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to mammalian receptor populations that may consume aquatic prey from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Raccoon
Survival, growth, and reproduction of piscivorous mammal populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to mammalian receptor populations that may consume fish from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Mink

Table 8-5
Bioaccumulative Chemicals List and Log K_{ow} Values for Relevant Chemicals
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Log K_{ow} Range	Selected log K_{ow}	Reference
Inorganics			
Arsenic	-- - --	--	--
Cadmium	-- - --	--	--
Chromium	-- - --	--	--
Copper	-- - --	--	--
Lead	-- - --	--	--
Mercury	-- - --	--	--
Nickel	-- - --	--	--
Selenium	-- - --	--	--
Silver	-- - --	--	--
Zinc	-- - --	--	--
Pesticides/PCBs			
4,4'-DDD	5.90 - 6.65	6.10	USEPA 1995a
4,4'-DDE	5.63 - 6.96	6.76	USEPA 1995a
4,4'-DDT	5.56 - 7.01	6.53	USEPA 1995a
Aldrin	5.11 - 7.50	6.50	USEPA 1995a
alpha-BHC	3.75 - 3.81	3.80	USEPA 1995a
alpha-Chlordane	5.80 - 6.41	6.32	USEPA 1995a
Aroclor-1016	-- - --	5.60	Sample et al. 1996
Aroclor-1221	-- - --	4.70	Jones et al. 1997
Aroclor-1232	-- - --	5.10	Jones et al. 1997
Aroclor-1242	-- - --	5.60	Jones et al. 1997
Aroclor-1248	-- - --	6.20	Jones et al. 1997
Aroclor-1254	-- - --	6.50	Jones et al. 1997
Aroclor-1260	-- - --	6.80	Jones et al. 1997
beta-BHC	3.75 - 3.84	3.81	USEPA 1995a
delta-BHC	-- - --	4.10	USEPA 1996a
Dieldrin	3.63 - 6.20	5.37	USEPA 1995a
Endosulfan I	3.55 - 3.85	3.83	USEPA 1995a
Endosulfan II	3.62 - 4.52	4.52	USEPA 1995a
Endrin	2.92 - 5.20	5.06	USEPA 1995a
gamma-BHC (Lindane)	3.61 - 3.90	3.73	USEPA 1995a
gamma-Chlordane	5.80 - 6.41	6.32	USEPA 1995a
Heptachlor	4.93 - 6.26	6.26	USEPA 1995a
Heptachlor epoxide	3.50 - 5.40	5.00	USEPA 1995a
Methoxychlor	4.20 - 5.60	5.08	USEPA 1995a
Toxaphene	4.33 - 5.56	5.50	USEPA 1995a
Volatile and Semivolatile Organics			
1,1,2,2-Tetrachloroethane	2.31 - 2.64	2.39	USEPA 1995a
1,2,4-Trichlorobenzene	3.89 - 4.23	4.01	USEPA 1995a
1,2-Dichlorobenzene	3.20 - 3.61	3.43	USEPA 1995a
1,3-Dichlorobenzene	-- - --	3.50	USEPA 1996a
1,4-Dichlorobenzene	3.26 - 3.62	3.42	USEPA 1995a
4-Bromophenyl-phenylether	4.89 - 5.24	5.00	USEPA 1995a

Table 8-5
Bioaccumulative Chemicals List and Log K_{ow} Values for Relevant Chemicals
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Log K_{ow} Range	Selected log K_{ow}	Reference
4-Chlorophenyl-phenylether	4.08 - 5.09	4.95	USEPA 1995a
Acenaphthene	3.77 - 4.49	3.92	USEPA 1995a
Acenaphthylene	-- - --	4.10	USEPA 1996a
Anthracene	4.44 - 4.80	4.55	USEPA 1995a
Benzo(a)anthracene	5.61 - 5.79	5.70	USEPA 1995a
Benzo(a)pyrene	5.98 - 6.34	6.11	USEPA 1995a
Benzo(b)fluoranthene	5.79 - 6.40	6.20	USEPA 1995a
Benzo(g,h,i)perylene	6.58 - 7.05	6.70	USEPA 1995a
Benzo(k)fluoranthene	6.12 - 6.27	6.20	USEPA 1995a
Chrysene	5.41 - 5.79	5.70	USEPA 1995a
Dibenz(a,h)anthracene	6.50 - 6.88	6.69	USEPA 1995a
Fluoranthene	4.84 - 5.39	5.12	USEPA 1995a
Fluorene	4.04 - 4.40	4.21	USEPA 1995a
Hexachlorobenzene	5.23 - 6.92	5.89	USEPA 1995a
Hexachlorobutadiene	4.74 - 5.16	4.81	USEPA 1995a
Hexachlorocyclopentadiene	5.05 - 5.51	5.39	USEPA 1995a
Hexachloroethane	3.82 - 4.14	4.00	USEPA 1995a
Indeno(1,2,3-cd)pyrene	6.58 - 6.72	6.65	USEPA 1995a
Pentachlorophenol	5.01 - 5.24	5.09	USEPA 1995a
Phenanthrene	4.37 - 4.57	4.55	USEPA 1995a
Pyrene	4.76 - 5.52	5.11	USEPA 1995a

Table 8-6
Sediment Bioaccumulation Factors For Plants, Benthic Invertebrates, and Fish - Screening
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Sediment-Plant BCF (dry weight)		Sediment-Invertebrate BAF (dry weight)		Sediment-Fish BAF (dry weight)	
	Value	Reference	Value	Reference	Value	Reference
Inorganics						
Arsenic	1.103	Bechtel Jacobs 1998a	0.690	Bechtel Jacobs 1998b	0.126	Pascoe et al. 1996
Cadmium	3.250	Bechtel Jacobs 1998a	3.073	Bechtel Jacobs 1998b	0.164	Pascoe et al. 1996
Chromium	0.084	Bechtel Jacobs 1998a	0.186	Bechtel Jacobs 1998b	0.038	Krantzberg and Boyd 1992
Copper	0.625	Bechtel Jacobs 1998a	7.957	Bechtel Jacobs 1998b	0.100	Krantzberg and Boyd 1992
Lead	0.468	Bechtel Jacobs 1998a	0.326	Bechtel Jacobs 1998b	0.070	Krantzberg and Boyd 1992
Mercury	5.000	Bechtel Jacobs 1998a	2.868	Bechtel Jacobs 1998b	4.580	Cope et al. 1990
Nickel	1.411	Bechtel Jacobs 1998a	0.214	Bechtel Jacobs 1998b	1.000	--
Selenium	3.012	Bechtel Jacobs 1998a	1.000	--	1.000	--
Silver	0.037	Bechtel Jacobs 1998a	0.180	Hirsch 1998	1.000	--
Zinc	1.820	Bechtel Jacobs 1998a	4.759	Bechtel Jacobs 1998b	0.147	Pascoe et al. 1996
Pesticides/PCBs						
4,4'-DDD	0.4234	USEPA 2005	0.350	Oliver and Niimi 1988	2.250	Oliver and Niimi 1988
4,4'-DDE	0.2990	USEPA 2005	3.360	Oliver and Niimi 1988	26.20	Oliver and Niimi 1988
4,4'-DDT	0.3375	USEPA 2005	2.280	Oliver and Niimi 1988	8.800	Oliver and Niimi 1988
Aldrin	0.3429	USEPA 2005	1.000	--	1.000	--
alpha-BHC	1.4240	USEPA 2005	1.000	--	1.000	--
alpha-Chlordane	0.3771	USEPA 2005	1.000	--	1.000	--
Aroclor-1016	0.5512	USEPA 2005	21.89	Bechtel Jacobs 1998b	12.94	Oliver and Niimi 1988
Aroclor-1221	0.8859	USEPA 2005	21.89	Bechtel Jacobs 1998b	12.94	Oliver and Niimi 1988
Aroclor-1232	0.7175	USEPA 2005	21.89	Bechtel Jacobs 1998b	12.94	Oliver and Niimi 1988
Aroclor-1242	0.5512	USEPA 2005	21.89	Bechtel Jacobs 1998b	12.94	Oliver and Niimi 1988
Aroclor-1248	0.4017	USEPA 2005	21.89	Bechtel Jacobs 1998b	12.94	Oliver and Niimi 1988
Aroclor-1254	0.3429	USEPA 2005	21.89	Bechtel Jacobs 1998b	12.94	Oliver and Niimi 1988
Aroclor-1260	0.2928	USEPA 2005	21.89	Bechtel Jacobs 1998b	12.94	Oliver and Niimi 1988
beta-BHC	1.4165	USEPA 2005	1.000	--	1.000	--
delta-BHC	1.2156	USEPA 2005	1.000	--	1.000	--
Dieldrin	0.6223	USEPA 2005	4.520	Standley 1997	1.000	--
Endosulfan I	1.4016	USEPA 2005	1.000	--	1.000	--

Table 8-6
Sediment Bioaccumulation Factors For Plants, Benthic Invertebrates, and Fish - Screening
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Sediment-Plant BCF (dry weight)		Sediment-Invertebrate BAF (dry weight)		Sediment-Fish BAF (dry weight)	
	Value	Reference	Value	Reference	Value	Reference
Endosulfan II	0.9741	USEPA 2005	1.000	--	1.000	--
Endrin	0.7328	USEPA 2005	1.000	--	1.000	--
gamma-BHC (Lindane)	1.4775	USEPA 2005	1.000	--	6.200	Oliver and Niimi 1988
gamma-Chlordane	0.3771	USEPA 2005	1.000	--	1.000	--
Heptachlor	0.3892	USEPA 2005	1.000	--	1.000	--
Heptachlor epoxide	0.7563	USEPA 2005	1.000	--	1.000	--
Methoxychlor	0.7251	USEPA 2005	1.000	--	1.000	--
Toxaphene	0.5810	USEPA 2005	1.000	--	1.000	--
Volatile and Semivolatile Organics						
1,1,2,2-Tetrachloroethane	2.9950	USEPA 2005	1.000	--	1.000	--
1,2,4-Trichlorobenzene	1.2747	USEPA 2005	0.480	Oliver and Niimi 1988	0.074	Parkerton et al. 1993
1,2-Dichlorobenzene	1.7307	USEPA 2005	1.000	--	0.085	Parkerton et al. 1993
1,3-Dichlorobenzene	1.6680	USEPA 2005	1.000	--	0.085	Parkerton et al. 1993
1,4-Dichlorobenzene	1.7399	USEPA 2005	1.000	--	0.085	Parkerton et al. 1993
4-Bromophenyl-phenylether	0.7563	USEPA 2005	1.000	--	1.000	--
4-Chlorophenyl-phenylether	0.7765	USEPA 2005	1.000	--	1.000	--
Acenaphthene	1.3367	USEPA 2005	2.040	Maruya et al. 1997	1.000	--
Acenaphthylene	1.2156	USEPA 2005	2.040	Acenaphthene value	1.000	--
Anthracene	0.9588	USEPA 2005	0.271	Maruya et al. 1997	1.000	--
Benzo(a)anthracene	0.5229	USEPA 2005	1.400	Maruya et al. 1997	1.000	--
Benzo(a)pyrene	0.4212	USEPA 2005	0.191	Maruya et al. 1997	1.000	--
Benzo(b)fluoranthene	0.4017	USEPA 2005	0.160	Maruya et al. 1997	1.000	--
Benzo(g,h,i)perylene	0.3086	USEPA 2005	0.295	Maruya et al. 1997	1.000	--
Benzo(k)fluoranthene	0.4017	USEPA 2005	0.421	Maruya et al. 1997	1.000	--
Chrysene	0.5229	USEPA 2005	0.335	Maruya et al. 1997	1.000	--
Dibenz(a,h)anthracene	0.3102	USEPA 2005	0.271	Anthracene value	1.000	--
Fluoranthene	0.7099	USEPA 2005	0.312	Maruya et al. 1997	1.000	--
Fluorene	1.1471	USEPA 2005	1.130	Maruya et al. 1997	1.000	--
Hexachlorobenzene	0.4730	USEPA 2005	0.860	Oliver and Niimi 1988	0.940	Oliver and Niimi 1988

Table 8-6
Sediment Bioaccumulation Factors For Plants, Benthic Invertebrates, and Fish - Screening
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Sediment-Plant BCF (dry weight)		Sediment-Invertebrate BAF (dry weight)		Sediment-Fish BAF (dry weight)	
	Value	Reference	Value	Reference	Value	Reference
Hexachlorobutadiene	0.8360	USEPA 2005	0.610	Oliver and Niimi 1988	0.384	Parkerton et al. 1993
Hexachlorocyclopentadiene	0.6157	USEPA 2005	1.000	--	1.000	--
Hexachloroethane	1.2814	USEPA 2005	1.000	--	1.000	--
Indeno(1,2,3-cd)pyrene	0.3168	USEPA 2005	0.355	Maruya et al. 1997	1.000	--
Pentachlorophenol	0.7213	USEPA 2005	1.000	--	1.000	--
Phenanthrene	0.9588	USEPA 2005	0.652	Maruya et al. 1997	1.000	--
Pyrene	0.7137	USEPA 2005	0.803	Maruya et al. 1997	1.000	--

Table 8-7
Sediment Bioaccumulation Factors For Plants, Benthic Invertebrates, and Fish - Baseline
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Sediment-Plant BCF (dry weight)		Sediment-Invertebrate BAF (dry weight)		Sediment-Fish BAF (dry weight)	
	Value	Reference	Value	Reference	Value	Reference
Inorganics						
Arsenic	0.037	Bechtel Jacobs 1998a	0.466	Bechtel Jacobs 1998b	0.126	Pascoe et al. 1996
Cadmium	0.514	Bechtel Jacobs 1998a	0.679	Bechtel Jacobs 1998b	0.164	Pascoe et al. 1996
Chromium	0.048	Bechtel Jacobs 1998a	0.083	Bechtel Jacobs 1998b	0.038	Krantzberg and Boyd 1992
Copper	0.123	Bechtel Jacobs 1998a	0.919	Bechtel Jacobs 1998b	0.100	Krantzberg and Boyd 1992
Lead	0.038	Bechtel Jacobs 1998a	0.080	Bechtel Jacobs 1998b	0.070	Krantzberg and Boyd 1992
Mercury	0.344	Bechtel Jacobs 1998a	1.077	Bechtel Jacobs 1998b	3.250	Cope et al. 1990
Nickel	0.034	Bechtel Jacobs 1998a	0.134	Bechtel Jacobs 1998b	1.000	--
Selenium	0.567	Bechtel Jacobs 1998a	1.000	--	1.000	--
Silver	0.013	Bechtel Jacobs 1998a	0.180	Hirsch 1998	1.000	--
Zinc	0.358	Bechtel Jacobs 1998a	0.954	Bechtel Jacobs 1998b	0.147	Pascoe et al. 1996
Pesticides/PCBs						
4,4'-DDD	0.4234	USEPA 2005	0.230	Oliver and Niimi 1988	2.250	Oliver and Niimi 1988
4,4'-DDE	0.2990	USEPA 2005	2.000	Oliver and Niimi 1988	26.200	Oliver and Niimi 1988
4,4'-DDT	0.3375	USEPA 2005	1.300	Oliver and Niimi 1988	8.800	Oliver and Niimi 1988
Aldrin	0.3429	USEPA 2005	1.000	--	1.000	--
alpha-BHC	1.4240	USEPA 2005	1.000	--	1.000	--
alpha-Chlordane	0.3771	USEPA 2005	1.000	--	1.000	--
Aroclor-1016	0.5512	USEPA 2005	1.919	Bechtel Jacobs 1998b	12.940	Oliver and Niimi 1988
Aroclor-1221	0.8859	USEPA 2005	1.919	Bechtel Jacobs 1998b	12.940	Oliver and Niimi 1988
Aroclor-1232	0.7175	USEPA 2005	1.919	Bechtel Jacobs 1998b	12.940	Oliver and Niimi 1988
Aroclor-1242	0.5512	USEPA 2005	1.919	Bechtel Jacobs 1998b	12.940	Oliver and Niimi 1988
Aroclor-1248	0.4017	USEPA 2005	1.919	Bechtel Jacobs 1998b	12.940	Oliver and Niimi 1988
Aroclor-1254	0.3429	USEPA 2005	1.919	Bechtel Jacobs 1998b	12.940	Oliver and Niimi 1988
Aroclor-1260	0.2928	USEPA 2005	1.919	Bechtel Jacobs 1998b	12.940	Oliver and Niimi 1988
beta-BHC	1.4165	USEPA 2005	1.000	--	1.000	--
delta-BHC	1.2156	USEPA 2005	1.000	--	1.000	--
Dieldrin	0.6223	USEPA 2005	4.520	Standley 1997	1.000	--
Endosulfan I	1.4016	USEPA 2005	1.000	--	1.000	--

Table 8-7
Sediment Bioaccumulation Factors For Plants, Benthic Invertebrates, and Fish - Baseline
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Sediment-Plant BCF (dry weight)		Sediment-Invertebrate BAF (dry weight)		Sediment-Fish BAF (dry weight)	
	Value	Reference	Value	Reference	Value	Reference
Endosulfan II	0.9741	USEPA 2005	1.000	--	1.000	--
Endrin	0.7328	USEPA 2005	1.000	--	1.000	--
gamma-BHC (Lindane)	1.4775	USEPA 2005	1.000	--	6.200	Oliver and Niimi 1988
gamma-Chlordane	0.3771	USEPA 2005	1.000	--	1.000	--
Heptachlor	0.3892	USEPA 2005	1.000	--	1.000	--
Heptachlor epoxide	0.7563	USEPA 2005	1.000	--	1.000	--
Methoxychlor	0.7251	USEPA 2005	1.000	--	1.000	--
Toxaphene	0.5810	USEPA 2005	1.000	--	1.000	--
Volatile and Semivolatile Organics						
1,1,2,2-Tetrachloroethane	2.9950	USEPA 2005	1.000	--	1.000	--
1,2,4-Trichlorobenzene	1.2747	USEPA 2005	0.260	Oliver and Niimi 1988	0.074	Parkerton et al. 1993
1,2-Dichlorobenzene	1.7307	USEPA 2005	1.000	--	0.085	Parkerton et al. 1993
1,3-Dichlorobenzene	1.6680	USEPA 2005	1.000	--	0.085	Parkerton et al. 1993
1,4-Dichlorobenzene	1.7399	USEPA 2005	1.000	--	0.085	Parkerton et al. 1993
4-Bromophenyl-phenylether	0.7563	USEPA 2005	1.000	--	1.000	--
4-Chlorophenyl-phenylether	0.7765	USEPA 2005	1.000	--	1.000	--
Acenaphthene	1.3367	USEPA 2005	2.040	Maruya et al. 1997	1.000	--
Acenaphthylene	1.2156	USEPA 2005	2.040	Acenaphthene value	1.000	--
Anthracene	0.9588	USEPA 2005	0.191	Maruya et al. 1997	1.000	--
Benzo(a)anthracene	0.5229	USEPA 2005	0.358	Maruya et al. 1997	1.000	--
Benzo(a)pyrene	0.4212	USEPA 2005	0.127	Maruya et al. 1997	1.000	--
Benzo(b)fluoranthene	0.4017	USEPA 2005	0.150	Maruya et al. 1997	1.000	--
Benzo(g,h,i)perylene	0.3086	USEPA 2005	0.215	Maruya et al. 1997	1.000	--
Benzo(k)fluoranthene	0.4017	USEPA 2005	0.232	Maruya et al. 1997	1.000	--
Chrysene	0.5229	USEPA 2005	0.198	Maruya et al. 1997	1.000	--
Dibenz(a,h)anthracene	0.3102	USEPA 2005	0.191	Anthracene value	1.000	--
Fluoranthene	0.7099	USEPA 2005	0.212	Maruya et al. 1997	1.000	--
Fluorene	1.1471	USEPA 2005	0.481	Maruya et al. 1997	1.000	--
Hexachlorobenzene	0.4730	USEPA 2005	0.520	Oliver and Niimi 1988	0.940	Oliver and Niimi 1988

Table 8-7
Sediment Bioaccumulation Factors For Plants, Benthic Invertebrates, and Fish - Baseline
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Sediment-Plant BCF (dry weight)		Sediment-Invertebrate BAF (dry weight)		Sediment-Fish BAF (dry weight)	
	Value	Reference	Value	Reference	Value	Reference
Hexachlorobutadiene	0.8360	USEPA 2005	0.390	Oliver and Niimi 1988	0.384	Parkerton et al. 1993
Hexachlorocyclopentadiene	0.6157	USEPA 2005	1.000	--	1.000	--
Hexachloroethane	1.2814	USEPA 2005	1.000	--	1.000	--
Indeno(1,2,3-cd)pyrene	0.3168	USEPA 2005	0.173	Maruya et al. 1997	1.000	--
Pentachlorophenol	0.7213	USEPA 2005	1.000	--	1.000	--
Phenanthrene	0.9588	USEPA 2005	0.294	Maruya et al. 1997	1.000	--
Pyrene	0.7137	USEPA 2005	0.435	Maruya et al. 1997	1.000	--

Table 8-8
Exposure Parameters for Upper Trophic Level Ecological Receptors - Screening
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Receptor	Body Weight (kg)		Food Ingestion Rate (kg/day - dry)		Dietary Composition (percent)				Sediment Ingestion (percent)	
	Value	Reference	Value	Reference	Fish	Aquatic Plants	Benthic Invert.	Reference	Value	Reference
Birds										
Belted kingfisher	0.125	Dunning 1993	0.0262	USEPA 1993	84.0	0	16.0	USEPA 1993	0	Sample and Suter 1994
Great blue heron	2.10	Butler 1992	0.1356	allometric equation (Nagy 2001)	100	0	0	USEPA 1993; Quinney and Smith 1980	0	Sample and Suter 1994
Mallard	0.612	Bellrose 1980	0.0717	allometric equation (Nagy 2001)	0	86.7	10.0	Palmer 1976	3.3	Beyer et al. 1994
Marsh wren	0.010	Dunning 1993	0.0030	USEPA 1993	0	0	95.0	USEPA 1993	5.0	Assumed based on diet
Mammals										
Mink	0.726	Silva and Downing 1995	0.0349	USEPA 1993	100.0	0.0	0.0	USEPA 1993	0	Sample and Suter 1994
Muskrat	0.750	USEPA 1993	0.0765	USEPA 1993	0	90.6	0	USEPA 1993	9.4	Beyer et al. 1994 (raccoon)
Raccoon	4.23	Silva and Downing 1995	0.1307	Conover 1989	7.0	40.0	43.6	USEPA 1993	9.4	Beyer et al. 1994

Table 8-9
Exposure Parameters for Upper Trophic Level Ecological Receptors - Baseline
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Receptor	Body Weight (kg)		Food Ingestion Rate		Dietary Composition (percent)				Sediment Ingestion (percent)	
	Value	Reference	Value	Reference	Fish	Aquatic Plants	Benthic Invert.	Reference	Value	Reference
Birds										
Belted kingfisher	0.148	Dunning 1993	0.0180	USEPA 1993	84.0	0	16.0	USEPA 1993	0	Sample and Suter 1994
Great blue heron	2.23	Quinney 1982	0.1254	allometric equation (Nagy 2001)	100	0	0	USEPA 1993; Quinney and Smith 1980	0	Sample and Suter 1994
Mallard	1.18	Bellrose 1980	0.0564	allometric equation (Nagy 2001)	0	86.7	10.0	Palmer 1976	3.3	Beyer et al. 1994
Marsh wren	0.011	Dunning 1993	0.0025	USEPA 1993	0	0	95.0	USEPA 1993	5.0	Assumed based on diet
Mammals										
Mink	0.777	Silva and Downing 1995	0.0266	USEPA 1993	100	0.0	0.0	USEPA 1993	0	Sample and Suter 1994
Muskrat	1.17	Silva and Downing 1995	0.0596	USEPA 1993	0	90.6	0	USEPA 1993	9.4	Beyer et al. 1994 (raccoon)
Raccoon	5.94	Silva and Downing 1995	0.1031	Conover 1989	7.0	40.0	43.6	USEPA 1993	9.4	Beyer et al. 1994

Table 8-10
Medium-Specific Screening Values
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Screening Value	Units	Reference	Type	TOC (percent)
Surface Water					
Aluminum	87.0	ug/L	USEPA 2006a	Freshwater	
Antimony	500	ug/L	USEPA 2006b	Marine	
Arsenic	36.0	ug/L	USEPA 2006a	Marine	
Barium	4.00	ug/L	Suter and Tsao 1996	Freshwater	
Beryllium	0.66	ug/L	Suter and Tsao 1996	Freshwater	
Cadmium (total)	8.85	ug/L	USEPA 2006a	Marine	
Cadmium (dissolved)	8.80	ug/L	USEPA 2006a	Marine	
Chromium (total)	50.4	ug/L	USEPA 2006a	Marine	
Chromium (dissolved)	50.0	ug/L	USEPA 2006a	Marine	
Cobalt	23.0	ug/L	Suter and Tsao 1996	Freshwater	
Copper (total)	3.70	ug/L	USEPA 2006a	Marine	
Copper (dissolved)	3.10	ug/L	USEPA 2006a	Marine	
Cyanide	1.00	ug/L	USEPA 2006a	Marine	
Iron	1,000	ug/L	USEPA 2006a	Freshwater	
Lead (total)	8.50	ug/L	USEPA 2006a	Marine	
Lead (dissolved)	8.10	ug/L	USEPA 2006a	Marine	
Manganese	120	ug/L	Suter and Tsao 1996	Freshwater	
Mercury (total)	1.10	ug/L	USEPA 2006a	Marine	
Mercury (dissolved)	0.94	ug/L	USEPA 2006a	Marine	
Nickel (total)	8.30	ug/L	USEPA 2006a	Marine	
Nickel (dissolved)	8.20	ug/L	USEPA 2006a	Marine	
Selenium (total)	71.1	ug/L	USEPA 2006a	Marine	
Selenium (dissolved)	71.0	ug/L	USEPA 2006a	Marine	
Silver	0.23	ug/L	USEPA 2001	Marine	
Thallium	21.3	ug/L	USEPA 2001	Marine	
Vanadium	20.0	ug/L	Suter and Tsao 1996	Freshwater	
Zinc (total)	85.6	ug/L	USEPA 2006a	Marine	
Zinc (dissolved)	81.0	ug/L	USEPA 2006a	Marine	
Aldrin	0.13	ug/L	USEPA 2001	Marine	

Table 8-10
Medium-Specific Screening Values
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Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Screening Value	Units	Reference	Type	TOC (percent)
alpha-BHC	25.0	ug/L	USEPA 2006b	Marine	
alpha-Chlordane	0.004	ug/L	USEPA 2006a	Marine	
Aroclor-1016	0.03	ug/L	USEPA 2006a	Marine	
Aroclor-1221	0.03	ug/L	USEPA 2006a	Marine	
Aroclor-1232	0.03	ug/L	USEPA 2006a	Marine	
Aroclor-1242	0.03	ug/L	USEPA 2006a	Marine	
Aroclor-1248	0.03	ug/L	USEPA 2006a	Marine	
Aroclor-1254	0.03	ug/L	USEPA 2006a	Marine	
Aroclor-1260	0.03	ug/L	USEPA 2006a	Marine	
beta-BHC	2.20	ug/L	Suter and Tsao 1996	Freshwater	
delta-BHC	2.20	ug/L	Suter and Tsao 1996	Freshwater	
Dieldrin	0.11	ug/L	USEPA 1996b	Marine	
Endosulfan I	0.0087	ug/L	USEPA 2006a	Marine	
Endosulfan II	0.0087	ug/L	USEPA 2006a	Marine	
Endosulfan sulfate	0.0087	ug/L	USEPA 2006a	Marine	
Endrin	0.01	ug/L	USEPA 1996b	Marine	
Endrin aldehyde	0.01	ug/L	USEPA 1996b	Marine	
Endrin ketone	0.01	ug/L	USEPA 1996b	Marine	
gamma-BHC (Lindane)	0.016	ug/L	USEPA 2001	Marine	
gamma-Chlordane	0.004	ug/L	USEPA 2006a	Marine	
Heptachlor	0.0036	ug/L	USEPA 2006a	Marine	
Heptachlor epoxide	0.0036	ug/L	USEPA 2006a	Marine	
Methoxychlor	0.03	ug/L	USEPA 2006a	Marine	
Toxaphene	0.21	ug/L	USEPA 1996b	Marine	
1,1-Biphenyl	14.0	ug/L	USEPA 1996b	Freshwater	
2,4,5-Trichlorophenol	12.0	ug/L	USEPA 2006b	Marine	
2,4,6-Trichlorophenol	61.0	ug/L	USEPA 2006b	Marine	
2,4-Dichlorophenol	11.0	ug/L	USEPA 2006b	Freshwater	
2,4-Dimethylphenol	110	ug/L	USEPA 1994	Freshwater	
2,4-Dinitrophenol	48.5	ug/L	USEPA 2001	Marine	

Table 8-10
Medium-Specific Screening Values
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Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Screening Value	Units	Reference	Type	TOC (percent)
2,4-Dinitrotoluene	37.0	ug/L	Buchman 1999 (UF of 10)	Marine	
2,6-Dinitrotoluene	81.0	ug/L	USEPA 2006b	Freshwater	
2-Chlorophenol	265	ug/L	USEPA 2006b	Marine	
2-Methylnaphthalene	4.20	ug/L	USEPA 2006b	Marine	
2-Methylphenol	1,020	ug/L	USEPA 2006b	Marine	
2-Nitrophenol	2,940	ug/L	USEPA 2006b	Marine	
3,3'-Dichlorobenzidine	73.0	ug/L	USEPA 2006b	Marine	
4,6-Dinitro-2-methylphenol	2.30	ug/L	USEPA 2001	Freshwater	
4-Bromophenyl-phenylether	1.50	ug/L	USEPA 1996b	Freshwater	
4-Chloro-3-methylphenol	0.30	ug/L	USEPA 2001	Freshwater	
4-Chloroaniline	232	ug/L	USEPA 2006b	Freshwater	
4-Methylphenol	543	ug/L	USEPA 2006b	Freshwater	
4-Nitrophenol	71.7	ug/L	USEPA 2001	Marine	
Acenaphthene	40.0	ug/L	USEPA 1996b	Marine	
Anthracene	0.18	ug/L	USEPA 2006b	Marine	
Atrazine	1.80	ug/L	USEPA 2006b	Freshwater	
Benzo(a)anthracene	0.027	ug/L	Suter and Tsao 1996	Freshwater	
Benzo(a)pyrene	0.014	ug/L	Suter and Tsao 1996	Freshwater	
Benzoic acid	42.0	ug/L	Suter and Tsao 1996	Freshwater	
Benzyl alcohol	8.60	ug/L	Suter and Tsao 1996	Freshwater	
bis(2-Chloroethyl)ether	2,380	ug/L	USEPA 2001	Freshwater	
bis(2-Ethylhexyl)phthalate	360	ug/L	Buchman 1999	Marine	
Butylbenzylphthalate	29.4	ug/L	USEPA 2001	Marine	
Dibenzofuran	65.0	ug/L	USEPA 2006b	Marine	
Diethylphthalate	75.9	ug/L	USEPA 2001	Marine	
Dimethyl phthalate	580	ug/L	USEPA 2001	Marine	
Di-n-butylphthalate	3.40	ug/L	USEPA 2001	Marine	
Di-n-octylphthalate	22.0	ug/L	USEPA 2006b	Freshwater	
Fluoranthene	11.0	ug/L	USEPA 1996b	Marine	
Fluorene	2.50	ug/L	USEPA 2006b	Marine	

Table 8-10
Medium-Specific Screening Values
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Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Screening Value	Units	Reference	Type	TOC (percent)
Hexachlorobenzene	3.68	ug/L	Buchman 1999	Freshwater	
Hexachlorobutadiene	0.32	ug/L	USEPA 2001	Marine	
Hexachlorocyclopentadiene	0.07	ug/L	USEPA 2001	Marine	
Hexachloroethane	9.40	ug/L	USEPA 2001	Marine	
Isophorone	129	ug/L	USEPA 2001	Marine	
Naphthalene	23.5	ug/L	USEPA 2001	Marine	
Nitrobenzene	66.8	ug/L	USEPA 2001	Marine	
n-Nitroso-di-n-propylamine	120	ug/L	USEPA 2006b	Marine	
n-Nitrosodiphenylamine	33,000	ug/L	USEPA 2001	Marine	
Pentachlorophenol	7.90	ug/L	USEPA 2006a	Marine	
Phenanthrene	8.30	ug/L	USEPA 1996b	Marine	
Phenol	58.0	ug/L	USEPA 2001	Marine	
Pyrene	0.24	ug/L	USEPA 2006b	Marine	
1,3,5-Trinitrobenzene	11.0	ug/L	Talmage et al. 1999	Freshwater	
1,3-Dinitrobenzene	17.0	ug/L	Talmage et al. 1999	Freshwater	
2,4,6-Trinitrotoluene	100	ug/L	USEPA 2006b	Marine	
2,4-Dinitrotoluene	37.0	ug/L	Buchman 1999 (UF of 10)	Marine	
2,6-Dinitrotoluene	81.0	ug/L	USEPA 2006b	Freshwater	
2-Amino-4,6-dinitrotoluene	1,480	ug/L	USEPA 2006b	Freshwater	
3,5-Dinitroaniline	59.0	ug/L	Talmage et al. 1999	Freshwater	
3-Nitrotoluene	750	ug/L	USEPA 2006b	Freshwater	
4-Amino-2,6-dinitrotoluene	1,480	ug/L	2-Amino-4,6-dinitrotoluene value	Freshwater	
4-Nitrotoluene	1,900	ug/L	USEPA 2006b	Freshwater	
HMX	330	ug/L	Talmage et al. 1999	Freshwater	
Nitrobenzene	66.8	ug/L	USEPA 2001	Marine	
Nitroglycerine	138	ug/L	USEPA 2006b	Freshwater	
PETN	85,000	ug/L	USEPA 2006b	Freshwater	
RDX	186	ug/L	Talmage et al. 1999	Freshwater	
1,1,1-Trichloroethane	312	ug/L	USEPA 2001	Marine	
1,1,2,2-Tetrachloroethane	90.2	ug/L	USEPA 2001	Marine	

Table 8-10
Medium-Specific Screening Values
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Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Screening Value	Units	Reference	Type	TOC (percent)
1,1,2-Trichloroethane	550	ug/L	USEPA 2006b	Marine	
1,1-Dichloroethane	47.0	ug/L	USEPA 1996b	Freshwater	
1,1-Dichloroethene	2,240	ug/L	USEPA 2001	Marine	
1,2,3-Trichlorobenzene	8.00	ug/L	USEPA 2006b	Freshwater	
1,2,4-Trichlorobenzene	4.50	ug/L	USEPA 2001	Marine	
1,2,4-Trimethylbenzene	19.0	ug/L	USEPA 2006b	Marine	
1,2-Dichlorobenzene	19.7	ug/L	USEPA 2001	Marine	
1,2-Dichloroethane	1,130	ug/L	USEPA 2001	Marine	
1,2-Dichloropropane	2,400	ug/L	USEPA 2001	Marine	
1,3,5-Trimethylbenzene	71.0	ug/L	USEPA 2006b	Freshwater	
1,3-Dichlorobenzene	28.5	ug/L	USEPA 2001	Marine	
1,4-Dichlorobenzene	19.9	ug/L	USEPA 2001	Marine	
2-Butanone	14,000	ug/L	Suter and Tsao 1996	Freshwater	
2-Hexanone	99.0	ug/L	Suter and Tsao 1996	Freshwater	
4-Methyl-2-pentanone	170	ug/L	Suter and Tsao 1996	Freshwater	
Acetone	1,500	ug/L	Suter and Tsao 1996	Freshwater	
Benzene	109	ug/L	USEPA 2001	Marine	
Bromoform	640	ug/L	USEPA 2001	Marine	
Bromomethane	120	ug/L	USEPA 2001	Marine	
Carbon disulfide	0.92	ug/L	Suter and Tsao 1996	Freshwater	
Carbon tetrachloride	1,500	ug/L	USEPA 2001	Marine	
Chlorobenzene	105	ug/L	USEPA 2001	Marine	
Chloroform	815	ug/L	USEPA 2001	Marine	
Chloromethane	2,700	ug/L	USEPA 2001	Marine	
cis-1,2-Dichloroethene	680	ug/L	USEPA 2006b	Marine	
cis-1,3-Dichloropropene	7.90	ug/L	USEPA 2001	Marine	
Cumene	2.60	ug/L	USEPA 2006b	Freshwater	
Ethylbenzene	25.0	ug/L	USEPA 2006b	Marine	
Methylene chloride	2,560	ug/L	USEPA 2001	Marine	
Methyl-tert-butyl ether (MTBE)	11,070	ug/L	USEPA 2006b	Freshwater	

Table 8-10
Medium-Specific Screening Values
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Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Screening Value	Units	Reference	Type	TOC (percent)
Styrene	910	ug/L	USEPA 2006b	Marine	
Tetrachloroethene	45.0	ug/L	USEPA 2001	Marine	
Toluene	215	ug/L	USEPA 2006b	Marine	
trans-1,2-Dichloroethene	680	ug/L	USEPA 2006b	Marine	
trans-1,3-Dichloropropene	7.90	ug/L	USEPA 2001	Marine	
Trichloroethene	1,940	ug/L	USEPA 2006b	Marine	
Vinyl chloride	930	ug/L	USEPA 2006b	Freshwater	
Xylene, total	19.0	ug/L	USEPA 2006b	Marine	
Sediment					
Aluminum	18,000	mg/kg	Buchman 1999	Marine	
Antimony	2.00	mg/kg	Buchman 1999	Marine	
Arsenic	8.20	mg/kg	Long et al. 1995	Marine	
Barium	48.0	mg/kg	Buchman 1999	Marine	
Cadmium	1.20	mg/kg	Long et al. 1995	Marine	
Chromium	81.0	mg/kg	Long et al. 1995	Marine	
Cobalt	10.0	mg/kg	Buchman 1999	Marine	
Copper	34.0	mg/kg	Long et al. 1995	Marine	
Iron	220,000	mg/kg	Buchman 1999	Marine	
Lead	46.7	mg/kg	Long et al. 1995	Marine	
Manganese	260	mg/kg	Buchman 1999	Marine	
Mercury	0.15	mg/kg	Long et al. 1995	Marine	
Nickel	20.9	mg/kg	Long et al. 1995	Marine	
Selenium	1.00	mg/kg	Buchman 1999	Marine	
Silver	1.00	mg/kg	Long et al. 1995	Marine	
Vanadium	57.0	mg/kg	Buchman 1999	Marine	
Zinc	150	mg/kg	Long et al. 1995	Marine	
Aldrin	9.50	ug/kg	Buchman 1999	Marine	
alpha-BHC	6.00	ug/kg	OMOE 1993	Freshwater	
alpha-Chlordane	2.26	ug/kg	USEPA 2006b	Marine	
Aroclor-1016	40.0	ug/kg	USEPA 2006b	Marine	

Table 8-10
Medium-Specific Screening Values
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Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Screening Value	Units	Reference	Type	TOC (percent)
Aroclor-1221	40.0	ug/kg	USEPA 2006b	Marine	
Aroclor-1232	40.0	ug/kg	USEPA 2006b	Marine	
Aroclor-1242	40.0	ug/kg	USEPA 2006b	Marine	
Aroclor-1248	40.0	ug/kg	USEPA 2006b	Marine	
Aroclor-1254	40.0	ug/kg	USEPA 2006b	Marine	
Aroclor-1260	40.0	ug/kg	USEPA 2006b	Marine	
beta-BHC	5.00	ug/kg	OMOE 1993	Freshwater	
delta-BHC	5.00	ug/kg	OMOE 1993	Freshwater	
Dieldrin	0.72	ug/kg	USEPA 2006b	Marine	
Endosulfan I	10.0	ug/kg	Chandler and Scott 1991	Freshwater	
Endosulfan II	10.0	ug/kg	Chandler and Scott 1991	Freshwater	
Endosulfan sulfate	10.0	ug/kg	Chandler and Scott 1991	Freshwater	
Endrin	2.67	ug/kg	USEPA 2006b	Marine	
Endrin aldehyde	2.67	ug/kg	USEPA 2006b	Marine	
Endrin ketone	2.67	ug/kg	USEPA 2006b	Marine	
gamma-BHC (Lindane)	0.32	ug/kg	USEPA 2006b	Marine	
gamma-Chlordane	2.26	ug/kg	USEPA 2006b	Marine	
Heptachlor	0.30	ug/kg	Buchman 1999	Marine	
Heptachlor epoxide	0.60	ug/kg	USEPA 2006b	Marine	
Methoxychlor	29.6	ug/kg	USEPA 2006b	Marine	1
Toxaphene	536	ug/kg	USEPA 2006b	Marine	1
1,1-Biphenyl	1,100	ug/kg	USEPA 1996b	Freshwater	1
2,4,5-Trichlorophenol	819	ug/kg	USEPA 2006b	Marine	1
2,4,6-Trichlorophenol	2,647	ug/kg	USEPA 2006b	Marine	1
2,4-Dichlorophenol	117	ug/kg	USEPA 2006b	Freshwater	1
2,4-Dimethylphenol	29.0	ug/kg	Jones et al. 1997	Marine	
2,4-Dinitrotoluene	41.6	ug/kg	USEPA 2006b	Freshwater	1
2-Chlorophenol	344	ug/kg	USEPA 2006b	Marine	1
2-Methylnaphthalene	20.2	ug/kg	USEPA 2006b	Marine	
2-Methylphenol	63.0	ug/kg	Jones et al. 1997	Marine	

Table 8-10
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Chemical	Screening Value	Units	Reference	Type	TOC (percent)
3,3'-Dichlorobenzidine	2,060	ug/kg	USEPA 2006b	Marine	1
4-Bromophenyl-phenylether	1,300	ug/kg	USEPA 1996b	Freshwater	1
4-Methylphenol	670	ug/kg	Jones et al. 1997	Marine	
Acenaphthene	16.0	ug/kg	Long et al. 1995	Marine	
Acenaphthylene	44.0	ug/kg	Long et al. 1995	Marine	
Anthracene	85.3	ug/kg	Long et al. 1995	Marine	
Atrazine	6.62	ug/kg	USEPA 2006b	Freshwater	1
Benzo(a)anthracene	261	ug/kg	Long et al. 1995	Marine	
Benzo(a)pyrene	430	ug/kg	Long et al. 1995	Marine	
Benzo(b)fluoranthene	1,800	ug/kg	Buchman 1999	Marine	
Benzo(g,h,i)perylene	670	ug/kg	Buchman 1999	Marine	
Benzo(k)fluoranthene	1,800	ug/kg	Buchman 1999	Marine	
Benzoic acid	650	ug/kg	Jones et al. 1997	Marine	
Benzyl alcohol	57.0	ug/kg	Jones et al. 1997	Marine	
bis(2-Ethylhexyl)phthalate	182	ug/kg	USEPA 2006b	Marine	
Butylbenzylphthalate	63.0	ug/kg	Buchman 1999	Marine	
Carbazole	1,800	ug/kg	Cubbage et al. 1997	Freshwater	
Chrysene	384	ug/kg	Long et al. 1995	Marine	
Dibenz(a,h)anthracene	63.4	ug/kg	Long et al. 1995	Marine	
Dibenzofuran	7,297	ug/kg	USEPA 2006b	Marine	1
Diethylphthalate	218	ug/kg	USEPA 2006b	Marine	1
Di-n-butylphthalate	1,157	ug/kg	USEPA 2006b	Marine	1
Fluoranthene	600	ug/kg	Long et al. 1995	Marine	
Fluorene	19.0	ug/kg	Long et al. 1995	Marine	
Hexachlorobenzene	20.0	ug/kg	USEPA 2006b	Freshwater	
Hexachloroethane	73.0	ug/kg	Buchman 1999	Marine	
Indeno(1,2,3-cd)pyrene	600	ug/kg	Long et al. 1995	Marine	
Naphthalene	160	ug/kg	Long et al. 1995	Marine	
Nitrobenzene	21.0	ug/kg	Buchman 1999	Marine	
n-Nitrosodiphenylamine	28.0	ug/kg	Buchman 1999	Marine	

Table 8-10
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Chemical	Screening Value	Units	Reference	Type	TOC (percent)
Pentachlorophenol	360	ug/kg	Jones et al. 1997	Marine	
Phenanthrene	240	ug/kg	Long et al. 1995	Marine	
Phenol	420	ug/kg	Jones et al. 1997	Marine	
Pyrene	665	ug/kg	Long et al. 1995	Marine	
1,3,5-Trinitrobenzene	2.40	ug/kg	Talmage et al. 1999	Freshwater	1
1,3-Dinitrobenzene	6.70	ug/kg	Talmage et al. 1999	Freshwater	1
2,4,6-Trinitrotoluene	92.0	ug/kg	Talmage et al. 1999	Freshwater	1
2,4-Dinitrotoluene	41.6	ug/kg	USEPA 2006b	Freshwater	1
4-Nitrotoluene	4,062	ug/kg	USEPA 2006b	Freshwater	1
HMX	4.74	ug/kg	Talmage et al. 1999	Freshwater	1
Nitrobenzene	21.0	ug/kg	Buchman 1999	Marine	
RDX	12.7	ug/kg	Talmage et al. 1999	Freshwater	1
1,1,1-Trichloroethane	856	ug/kg	USEPA 2006b	Marine	1
1,1,2,2-Tetrachloroethane	202	ug/kg	USEPA 2006b	Marine	1
1,1,2-Trichloroethane	570	ug/kg	USEPA 2006b	Marine	1
1,1-Dichloroethane	27.0	ug/kg	Jones et al. 1997	Freshwater	1
1,1-Dichloroethene	2,782	ug/kg	USEPA 2006b	Marine	1
1,2,3-Trichlorobenzene	858	ug/kg	USEPA 2006b	Freshwater	1
1,2,4-Trichlorobenzene	473	ug/kg	USEPA 2006b	Marine	1
1,2-Dichlorobenzene	989	ug/kg	USEPA 2006b	Marine	1
1,2-Dichloroethane	250	ug/kg	Jones et al. 1997	Freshwater	1
1,3-Dichlorobenzene	842	ug/kg	USEPA 2006b	Marine	1
1,4-Dichlorobenzene	110	ug/kg	Buchman 1999	Marine	
Benzene	137	ug/kg	USEPA 2006b	Marine	1
Bromoform	1,308	ug/kg	USEPA 2006b	Marine	1
Carbon disulfide	0.85	ug/kg	Jones et al. 1997	Freshwater	1
Carbon tetrachloride	7,244	ug/kg	USEPA 2006b	Marine	1
Chlorobenzene	162	ug/kg	USEPA 2006b	Marine	1
Chloroform	22.0	ug/kg	Jones et al. 1997	Freshwater	1
cis-1,2-Dichloroethene	400	ug/kg	Jones et al. 1997	Freshwater	1

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Chemical	Screening Value	Units	Reference	Type	TOC (percent)
cis-1,3-Dichloropropene	7.31	ug/kg	USEPA 2006b	Marine	1
Cumene	86.0	ug/kg	USEPA 2006b	Freshwater	1
Ethylbenzene	305	ug/kg	USEPA 2006b	Marine	1
Methylene chloride	370	ug/kg	Jones et al. 1997	Freshwater	1
Styrene	7,069	ug/kg	USEPA 2006b	Marine	1
Tetrachloroethene	57.0	ug/kg	Buchman 1999	Marine	
Toluene	1,086	ug/kg	USEPA 2006b	Marine	1
trans-1,2-Dichloroethene	400	ug/kg	Jones et al. 1997	Freshwater	1
trans-1,3-Dichloropropene	7.31	ug/kg	USEPA 2006b	Marine	1
Trichloroethene	41.0	ug/kg	Buchman 1999	Marine	
Xylene, total	160	ug/kg	Jones et al. 1997	Freshwater	1

Table 8-11
Uncertainty Factors Used In Food Web Models
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Convert From	Convert To	Uncertainty Factor
Chronic NOAEL	Chronic NOAEL	1
Chronic LOAEL	Chronic NOAEL	5
Subchronic NOAEL	Chronic NOAEL	10
Subchronic LOAEL	Chronic NOAEL	20
Acute NOAEL	Chronic NOAEL	30
Acute LOAEL	Chronic NOAEL	50
LD50	Chronic NOAEL	100

Uncertainty factors from Wentsel et al. (1996)
Durations are defined as follows (USEPA 1999; Sample et al. 1996):
- Acute: <14 days
- Subchronic: 14 - 90 days
- Chronic: >90 days or during critical life stage

Table 8-12
Ingestion Screening Values for Mammals
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Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Metals								
Arsenic	mouse	0.03	3 generations	oral in water	reproduction	1.26	0.25	Sample et al. 1996
Arsenic	dog	10.0	2 years	oral in diet	systemic	6.00	1.20	ATSDR 1993a
Cadmium	rat	0.303	6 weeks	oral (gavage)	reproduction	10.0	1.00	Sample et al. 1996
Cadmium	dog	10.0	3 months	oral in diet	reproduction	3.75	0.75	ATSDR 1999a
Chromium	rat	0.35	3 months	oral in water	mortality	131	26.3	Sample et al. 1996
Chromium	rat	0.35	1 year	oral in water	body weight/intake	16.4	3.28	Sample et al. 1996
Copper	mouse	0.03	1 month + GD 0-19	oral in diet	developmental	104	78.0	ATSDR 1990a
Copper	mink	1.00	357 days	oral in diet	reproduction	15.1	11.7	Sample et al. 1996
Lead	rat	0.35	3 generations	oral in diet	reproduction	80.0	8.00	Sample et al. 1996
Mercury	rat	0.35	3 generations	oral in diet	reproduction	0.16	0.032	Sample et al. 1996
Mercury	mink	1.00	93 days	oral in diet	survival/weight loss	0.25	0.15	Sample et al. 1996
Nickel	rat	0.35	3 generations	oral in diet	reproduction	80.0	40.0	Sample et al. 1996
Nickel	dog	10.0	2 years	oral in diet	systemic	62.5	25.0	ATSDR 1997a
Selenium	rat	0.35	1 year	oral in water	reproduction	0.33	0.20	Sample et al. 1996
Silver	rat	0.35	2 weeks	oral in water	survival	45.3	9.06	ATSDR 1990b
Zinc	rat	0.35	GD 1-16	oral in diet	reproduction	320	160	Sample et al. 1996
Zinc	mink	1.00	25 weeks	oral	reproduction	104	20.8	ATSDR 1994a
Pesticides/PCBs								
4,4'-DDD	rat	0.35	2 years	oral in diet	reproduction	4.00	0.80	Sample et al. 1996
4,4'-DDD	dog	10.0	2 generations	oral in diet	reproduction	5.00	1.00	ATSDR 1994b
4,4'-DDE	rat	0.35	2 years	oral in diet	reproduction	4.00	0.80	Sample et al. 1996
4,4'-DDE	dog	10.0	2 generations	oral in diet	reproduction	5.00	1.00	ATSDR 1994b
4,4'-DDT	rat	0.35	2 years	oral in diet	reproduction	4.00	0.80	Sample et al. 1996
4,4'-DDT	dog	10.0	2 generations	oral in diet	reproduction	5.00	1.00	ATSDR 1994b
Aldrin	rat	0.35	3 generations	oral in diet	reproduction	1.00	0.20	Sample et al. 1996
alpha-BHC	rat	0.35	4 generations	oral in diet	reproduction	3.20	1.60	Sample et al. 1996
alpha-Chlordane	mouse	0.03	6 generations	oral in diet	reproduction	9.16	4.58	Sample et al. 1996
Aroclor-1016	oldfield mouse	0.014	12 months	oral in diet	reproduction	0.68	0.14	Sample et al. 1996
Aroclor-1016	mink	1.00	18 months	oral in diet	reproduction	3.43	1.37	Sample et al. 1996

Table 8-12
Ingestion Screening Values for Mammals
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Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Aroclor-1221	oldfield mouse	0.014	12 months	oral in diet	reproduction	0.68	0.14	Sample et al. 1996
Aroclor-1221	mink	1.00	7 months	oral in diet	reproduction	0.69	0.14	Sample et al. 1996
Aroclor-1232	oldfield mouse	0.014	12 months	oral in diet	reproduction	0.68	0.14	Sample et al. 1996
Aroclor-1232	mink	1.00	7 months	oral in diet	reproduction	0.69	0.14	Sample et al. 1996
Aroclor-1242	oldfield mouse	0.014	12 months	oral in diet	reproduction	0.68	0.14	Sample et al. 1996
Aroclor-1242	mink	1.00	7 months	oral in diet	reproduction	0.69	0.14	Sample et al. 1996
Aroclor-1248	oldfield mouse	0.014	12 months	oral in diet	reproduction	0.68	0.14	Sample et al. 1996
Aroclor-1248	mink	1.00	4.5 months	oral in diet	reproduction	0.69	0.14	Sample et al. 1996
Aroclor-1254	oldfield mouse	0.014	12 months	oral in diet	reproduction	0.68	0.14	Sample et al. 1996
Aroclor-1254	mink	1.00	4.5 months	oral in diet	reproduction	0.69	0.14	Sample et al. 1996
Aroclor-1260	oldfield mouse	0.014	12 months	oral in diet	reproduction	0.68	0.14	Sample et al. 1996
Aroclor-1260	mink	1.00	4.5 months	oral in diet	reproduction	0.69	0.14	Sample et al. 1996
beta-BHC	rat	0.35	4 generations	oral in diet	reproduction	3.20	1.60	Sample et al. 1996
delta-BHC	rat	0.35	4 generations	oral in diet	reproduction	3.20	1.60	Sample et al. 1996
Dieldrin	rat	0.35	3 generations	oral in diet	reproduction	0.20	0.04	Sample et al. 1996
Dieldrin	dog	10	15.7 months	oral in diet	systemic	0.14	0.03	ATSDR 1993b
Endosulfan I	rat	0.35	30 days	oral (gavage)	fertility	7.50	1.50	Sample et al. 1996
Endosulfan I	dog	10.0	2 years	oral in diet	systemic	5.00	1.00	ATSDR 1993c
Endosulfan II	rat	0.35	30 days	oral (gavage)	fertility	7.50	1.50	Sample et al. 1996
Endosulfan II	dog	10.0	2 years	oral in diet	systemic	5.00	1.00	ATSDR 1993c
Endrin	mouse	0.03	120 days	oral in diet	reproduction	0.92	0.18	Sample et al. 1996
gamma-BHC (Lindane)	rat	0.35	3 generations	oral in diet	reproduction	40.0	8.00	Sample et al. 1996
gamma-Chlordane	mouse	0.03	6 generations	oral in diet	reproduction	9.16	4.58	Sample et al. 1996
Heptachlor	mouse	0.03	70 days	oral in diet	reproduction	1.63	0.33	ATSDR 1993d
Heptachlor	mink	1.00	181 days	oral in diet	reproduction	1.00	0.20	Sample et al. 1996
Heptachlor epoxide	mouse	0.03	70 days	oral in diet	reproduction	1.63	0.33	ATSDR 1993d
Heptachlor epoxide	mink	1.00	181 days	oral in diet	reproduction	1.00	0.20	Sample et al. 1996
Methoxychlor	rat	0.35	11 months	oral in diet	reproduction	8.00	4.00	Sample et al. 1996
Toxaphene	rat	0.35	3 generations	oral in diet	reproduction	40.0	8.00	Sample et al. 1996

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Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Volatile and Semivolatile Organics								
1,1,2,2-Tetrachloroethane	rat	0.35	78 weeks	oral (gavage)	reproduction	380	76.0	ATSDR 1996a
1,2,4-Trichlorobenzene	rat	0.35	3 generations	oral in water	reproduction	106	53	Coulston and Kolbye 1994
1,2-Dichlorobenzene	rat	0.35	chronic	oral (gavage)	liver/kidney	429	85.7	Coulston and Kolbye 1994
1,3-Dichlorobenzene	rat	0.35	chronic	oral (gavage)	liver/kidney	429	85.7	Coulston and Kolbye 1994
1,4-Dichlorobenzene	rat	0.35	GD 6-15	oral (gavage)	developmental	500	250	ATSDR 1998
4-Bromophenyl-phenylether	--	--	--	--	--	NA	NA	--
4-Chlorophenyl-phenylether	--	--	--	--	--	NA	NA	--
Acenaphthene	mouse	0.03	13 weeks	oral (gavage)	reproduction	700	350	ATSDR 1995
Acenaphthylene	mouse	0.03	13 weeks	oral (gavage)	reproduction	700	350	ATSDR 1995
Anthracene	mouse	0.03	13 weeks	oral (gavage)	reproduction	5,000	1,000	ATSDR 1995
Benzo(a)anthracene	mouse	0.03	GD 7-16	oral (gavage)	reproduction	10.0	2.00	Sample et al. 1996
Benzo(a)pyrene	mouse	0.03	GD 7-16	oral (gavage)	reproduction	10.0	2.00	Sample et al. 1996
Benzo(b)fluoranthene	mouse	0.03	GD 7-16	oral (gavage)	reproduction	10.0	2.00	Sample et al. 1996
Benzo(g,h,i)perylene	mouse	0.03	GD 7-16	oral (gavage)	reproduction	10.0	2.00	Sample et al. 1996
Benzo(k)fluoranthene	mouse	0.03	GD 7-16	oral (gavage)	reproduction	10.0	2.00	Sample et al. 1996
Chrysene	mouse	0.03	GD 7-16	oral (gavage)	reproduction	10.0	2.00	Sample et al. 1996
Dibenz(a,h)anthracene	mouse	0.03	GD 7-16	oral (gavage)	reproduction	10.0	2.00	Sample et al. 1996
Fluoranthene	mouse	0.03	13 weeks	oral (gavage)	reproduction	2,500	500	ATSDR 1995
Fluorene	mouse	0.03	13 weeks	oral (gavage)	reproduction	2,500	500	ATSDR 1995
Hexachlorobenzene	rat	0.35	4 generations	oral in diet	reproduction	2.00	1.00	ATSDR 1996b
Hexachlorobenzene	dog	10.0	1 year	oral	systemic	12.0	1.20	ATSDR 1996b
Hexachlorobutadiene	rat	0.35	GD 1-22; LD 1-21	oral in diet	developmental	20.0	2.00	ATSDR 1994c
Hexachlorocyclopentadiene	mouse	0.03	GD 6-15	oral (gavage)	developmental	375	75.0	ATSDR 1999b
Hexachloroethane	rat	0.35	GD 6-16	oral (gavage)	reproduction	500	100	ATSDR 1997b
Indeno(1,2,3-cd)pyrene	mouse	0.03	GD 7-16	oral (gavage)	reproduction	10.0	2.00	Sample et al. 1996
Pentachlorophenol	rat	0.35	2 generations	oral in diet	developmental	25.0	5.00	ATSDR 1994d
Phenanthrene	mouse	0.03	13 weeks	oral (gavage)	reproduction	2,500	500	ATSDR 1995
Pyrene	mouse	0.03	GD 7-16	oral (gavage)	reproduction	10.0	2.00	Sample et al. 1996

Table 8-13
Ingestion Screening Values for Birds
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Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Metals								
Arsenic	brown-headed cowbird	0.049	7 months	oral in diet	survival	7.38	2.46	Sample et al. 1996
Arsenic	mallard	1.00	128 days	oral in diet	survival	12.8	5.14	Sample et al. 1996
Cadmium	mallard	1.15	90 days	oral in diet	reproduction	20.0	1.45	Sample et al. 1996
Chromium	American black duck	1.25	10 months	oral in diet	reproduction	5.00	1.00	Sample et al. 1996
Copper	chicken (chicks)	0.534	10 weeks	oral in diet	growth/survival	61.7	47.0	Sample et al. 1996
Lead	Japanese quail	0.15	12 weeks	oral in diet	reproduction	11.3	1.13	Sample et al. 1996
Lead	American kestrel	0.13	7 months	oral in diet	reproduction	19.3	3.85	Sample et al. 1996
Mercury	red-tailed hawk	1.10	12 weeks	oral in diet	survival/neurological	1.20	0.49	USEPA 1995b
Mercury	Japanese quail	0.15	1 year	oral in diet	reproduction	0.90	0.45	Sample et al. 1996
Mercury	mallard	1.00	3 generations	oral in diet	reproduction	0.078	0.026	USEPA 1997b
Nickel	mallard	0.782	90 days	oral in diet	growth/survival	107	77.4	Sample et al. 1996
Selenium	black-crowned night-heron	0.88	94 days	oral in diet	reproduction	9.00	1.80	Sample et al. 1996
Selenium	mallard	1.00	100 days	oral in diet	reproduction	0.80	0.40	Sample et al. 1996
Selenium	screech owl	0.20	13.7 weeks	oral in diet	reproduction	1.50	0.44	Sample et al. 1996
Silver	mallard	1.10	14 days	oral in diet	survival	178	35.6	USEPA 1999
Silver	chicken (chicks)	0.80	not specified	oral in diet	growth	35.0	7.00	Eisler 1996
Zinc	chicken	1.94	44 weeks	oral in diet	reproduction	131	14.5	Sample et al. 1996
Pesticides/PCBs								
4,4'-DDD	Japanese quail	0.11	3 generations	oral in diet	reproduction	5.00	0.50	USEPA 1995b
4,4'-DDD	barn owl	0.47	2 years	oral in diet	reproduction	0.40	0.08	Blus 1996
4,4'-DDD	mallard	1.00	2 years	oral in diet	reproduction	0.60	0.12	USEPA 1995b
4,4'-DDD	bald eagle	4.74	112 days	oral in diet	survival	3.00	0.30	USEPA 1995b
4,4'-DDE	Japanese quail	0.11	3 generations	oral in diet	reproduction	5.00	0.50	USEPA 1995b
4,4'-DDE	barn owl	0.47	2 years	oral in diet	reproduction	0.40	0.08	Blus 1996
4,4'-DDE	mallard	1.00	2 years	oral in diet	reproduction	0.60	0.12	USEPA 1995b
4,4'-DDE	bald eagle	4.74	112 days	oral in diet	survival	3.00	0.30	USEPA 1995b
4,4'-DDT	Japanese quail	0.11	3 generations	oral in diet	reproduction	5.00	0.50	USEPA 1995b
4,4'-DDT	barn owl	0.47	2 years	oral in diet	reproduction	0.40	0.08	Blus 1996

Table 8-13
Ingestion Screening Values for Birds
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Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
4,4'-DDT	mallard	1.00	2 years	oral in diet	reproduction	1.50	0.60	USEPA 1995b
4,4'-DDT	bald eagle	4.74	112 days	oral in diet	survival	3.00	0.30	USEPA 1995b
Aldrin	ring-necked pheasant	1.14	5 days	oral in diet	survival	0.35	0.07	Hill et al. 1975
Aldrin	mallard	1.00	5 days	oral in diet	survival	0.78	0.16	Hill et al. 1975
alpha-BHC	Japanese quail	0.15	90 days	oral in diet	reproduction	2.25	0.56	Sample et al. 1996
alpha-Chlordane	red-winged blackbird	0.064	84 days	oral in diet	survival	10.7	2.14	Sample et al. 1996
alpha-Chlordane	northern bobwhite	0.19	not specified	oral in diet	reproduction	5.95	1.19	Wiemeyer 1996
alpha-Chlordane	mallard	1.00	not specified	oral in diet	reproduction	4.00	0.80	Wiemeyer 1996
Aroclor-1016	ring-necked pheasant	1.00	17 weeks	oral	reproduction	1.80	0.36	Sample et al. 1996
Aroclor-1016	screech owl	0.181	2 generations	oral in diet	reproduction	2.05	0.41	Sample et al. 1996
Aroclor-1016	mallard	1.00	1 month	oral in diet	reproduction	7.50	1.50	USEPA 1995b
Aroclor-1221	ring-necked pheasant	1.00	17 weeks	oral	reproduction	1.80	0.36	Sample et al. 1996
Aroclor-1221	screech owl	0.181	2 generations	oral in diet	reproduction	2.05	0.41	Sample et al. 1996
Aroclor-1221	mallard	1.00	1 month	oral in diet	reproduction	7.50	1.50	USEPA 1995b
Aroclor-1232	ring-necked pheasant	1.00	17 weeks	oral	reproduction	1.80	0.36	Sample et al. 1996
Aroclor-1232	screech owl	0.181	2 generations	oral in diet	reproduction	2.05	0.41	Sample et al. 1996
Aroclor-1232	mallard	1.00	1 month	oral in diet	reproduction	7.50	1.50	USEPA 1995b
Aroclor-1242	ring-necked pheasant	1.00	17 weeks	oral	reproduction	1.80	0.36	Sample et al. 1996
Aroclor-1242	screech owl	0.181	2 generations	oral in diet	reproduction	2.05	0.41	Sample et al. 1996
Aroclor-1242	mallard	1.00	1 month	oral in diet	reproduction	7.50	1.50	USEPA 1995b
Aroclor-1248	ring-necked pheasant	1.00	17 weeks	oral	reproduction	1.80	0.36	Sample et al. 1996
Aroclor-1248	screech owl	0.181	2 generations	oral in diet	reproduction	2.05	0.41	Sample et al. 1996
Aroclor-1248	mallard	1.00	1 month	oral in diet	reproduction	7.50	1.50	USEPA 1995b
Aroclor-1254	ring-necked pheasant	1.00	17 weeks	oral	reproduction	1.80	0.36	Sample et al. 1996
Aroclor-1254	screech owl	0.181	2 generations	oral in diet	reproduction	2.05	0.41	Sample et al. 1996
Aroclor-1254	mallard	1.00	1 month	oral in diet	reproduction	7.50	1.50	USEPA 1995b
Aroclor-1260	ring-necked pheasant	1.00	17 weeks	oral	reproduction	1.80	0.36	Sample et al. 1996
Aroclor-1260	screech owl	0.181	2 generations	oral in diet	reproduction	2.05	0.41	Sample et al. 1996
Aroclor-1260	mallard	1.00	1 month	oral in diet	reproduction	7.50	1.50	USEPA 1995b

Table 8-13
Ingestion Screening Values for Birds
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
beta-BHC	Japanese quail	0.15	90 days	oral in diet	reproduction	2.25	0.56	Sample et al. 1996
delta-BHC	Japanese quail	0.15	90 days	oral in diet	reproduction	2.25	0.56	Sample et al. 1996
Dieldrin	barn owl	0.466	2 years	oral in diet	reproduction	0.39	0.08	Sample et al. 1996
Endosulfan I	gray partridge	0.40	4 weeks	oral in diet	reproduction	50.0	10.0	Sample et al. 1996
Endosulfan II	gray partridge	0.40	4 weeks	oral in diet	reproduction	50.0	10.0	Sample et al. 1996
Endrin	mallard	1.15	>200 days	oral in diet	reproduction	1.50	0.30	Sample et al. 1996
Endrin	screech owl	0.181	>83 days	oral in diet	reproduction	0.10	0.02	Sample et al. 1996
gamma-BHC (Lindane)	mallard	1.00	8 weeks	oral (gavage)	reproduction	20.0	4.00	Sample et al. 1996
gamma-Chlordane	red-winged blackbird	0.064	84 days	oral in diet	survival	10.7	2.14	Sample et al. 1996
gamma-Chlordane	northern bobwhite	0.19	not specified	oral in diet	reproduction	5.95	1.19	Wiemeyer 1996
gamma-Chlordane	mallard	1.00	not specified	oral in diet	reproduction	4.00	0.80	Wiemeyer 1996
Heptachlor	ring-necked pheasant	1.14	5 days	oral in diet	survival	1.38	0.28	Hill et al. 1975
Heptachlor	mallard	1.00	5 days	oral in diet	survival	2.40	0.48	Hill et al. 1975
Heptachlor epoxide	ring-necked pheasant	1.14	5 days	oral in diet	survival	1.38	0.28	Hill et al. 1975
Heptachlor epoxide	mallard	1.00	5 days	oral in diet	survival	2.40	0.48	Hill et al. 1975
Methoxychlor	chicken	1.50	16 weeks	oral in diet	reproduction	1,775	355	Wiemeyer 1996
Toxaphene	American black duck	1.00	2 seasons	oral in diet	reproduction	5.00	1.00	Wiemeyer 1996
Volatile and Semivolatile Organics								
1,1,2,2-Tetrachloroethane	--	--	--	--	--	NA	NA	--
1,2,4-Trichlorobenzene	northern bobwhite	0.19	14 days	oral	survival	161	32.2	TERRETOX 2002
1,2-Dichlorobenzene	northern bobwhite	0.19	14 days	oral	survival	161	32.2	TERRETOX 2002
1,3-Dichlorobenzene	northern bobwhite	0.19	14 days	oral	survival	161	32.2	TERRETOX 2002
1,4-Dichlorobenzene	northern bobwhite	0.19	14 days	oral	survival	161	32.2	TERRETOX 2002
4-Bromophenyl-phenylether	--	--	--	--	--	NA	NA	--
4-Chlorophenyl-phenylether	--	--	--	--	--	NA	NA	--
Acenaphthene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Acenaphthylene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Anthracene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Benzo(a)anthracene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963

Table 8-13
Ingestion Screening Values for Birds
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Benzo(a)pyrene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Benzo(b)fluoranthene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Benzo(g,h,i)perylene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Benzo(k)fluoranthene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Chrysene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Dibenz(a,h)anthracene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Fluoranthene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Fluorene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Hexachlorobenzene	Japanese quail	0.15	90 days	oral in diet	reproduction	0.565	0.113	Coulston and Kolbye 1994; TERRETOX 2002
Hexachlorobutadiene	Japanese quail	0.15	90 days	oral in diet	reproduction	17.0	3.39	Coulston and Kolbye 1994; TERRETOX 2002
Hexachlorocyclopentadiene	--	--	--	--	--	NA	NA	--
Hexachloroethane	--	--	--	--	--	NA	NA	--
Indeno(1,2,3-cd)pyrene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Pentachlorophenol	chicken	1.50	8 weeks	oral in diet	systemic/growth	8.52	4.26	Eisler 1989
Phenanthrene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963
Pyrene	chicken	1.50	35 days	oral in diet	reproduction	35.5	7.10	Rigdon and Neal 1963

Table 8-14
Screening Statistics - Sites 8 and 34 - Surface Water
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Normal Distribution)	Geometric Mean	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Inorganics (UG/L)															
Aluminum	-- - --	8 / 8	1,170	YSA14-SW02-1207	516	290	710	464	87.0	8 / 8	13.4	5.94	8.16	5.33	YES
Antimony	60.0 - 60.0	0 / 8	--	--	30.0	0.0	30.0	30.0	500	-- / --	0.12	0.06	0.06	0.06	NO
Arsenic	3.80 - 10.2	1 / 8	3.70	YS08-SW04-1207	3.85	1.36	4.76	3.61	36.0	0 / 8	0.10	0.11	0.13	0.10	NO
Barium	-- - --	8 / 8	37.9	YSA14-SW01-1207	34.5	2.51	36.2	34.5	4.00	8 / 8	9.48	8.63	9.05	8.61	YES
Beryllium	5.00 - 5.00	1 / 8	0.16	YSA14-SW05-1207	2.21	0.83	2.76	1.77	0.66	0 / 8	0.24	--	--	--	NO
Cadmium	0.75 - 1.00	4 / 8	1.10	YS08-SW01-1207	0.62	0.24	0.78	0.59	8.85	0 / 8	0.12	0.07	0.09	0.07	NO
Calcium [2]	-- - --	8 / 8	232,000	YSA14-SW03-1207	221,125	6,875	225,730	221,031	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chromium	0.31 - 1.50	1 / 8	0.74	YSA14-SW01-1207	0.35	0.25	0.51	0.29	50.4	0 / 8	0.015	0.007	0.010	0.006	NO
Cobalt	50.0 - 50.0	0 / 8	--	--	25.0	0.0	25.0	25.0	23.0	-- / --	2.17	1.09	1.09	1.09	NO[3]
Copper	25.0 - 25.0	0 / 8	--	--	12.5	0.00	12.5	12.5	3.70	-- / --	6.76	3.38	3.38	3.38	NO[3]
Cyanide	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	1.00	-- / --	10.0	5.00	5.00	5.00	NO[3]
Iron	-- - --	8 / 8	1,290	YSA14-SW02-1207	460	343	689	395	1,000	1 / 8	1.29	0.46	0.69	0.39	NO
Lead	10.00 - 50.0	0 / 8	--	--	20.0	9.3	26.2	16.7	8.50	-- / --	5.88	2.35	3.08	1.97	NO[3]
Magnesium [2]	-- - --	8 / 8	685,000	YSA14-SW03-1207	629,500	32,262	651,110	628,765	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Manganese	-- - --	8 / 8	68	YSA14-SW01-1207	46.2	11.7	54.0	45.0	120	0 / 8	0.56	0.39	0.45	0.37	NO
Mercury	0.20 - 0.20	0 / 8	--	--	0.10	0.00	0.10	0.10	1.10	-- / --	0.18	0.09	0.09	0.09	NO
Nickel	1.50 - 40.0	1 / 8	1.30	YSA14-SW02-1207	15.3	8.78	21.1	9.43	8.30	0 / 8	0.16	--	--	--	NO
Potassium [2]	-- - --	8 / 8	235,000	YSA14-SW03-1207	206,000	21,706	220,539	204,925	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Selenium	35.0 - 35.0	1 / 8	3.40	YSA14-SW03-1207	15.7	4.99	19.1	14.3	71.1	0 / 8	0.05	--	--	--	NO
Silver	10.0 - 10.0	1 / 8	1.20	YSA14-SW05-1207	4.53	1.34	5.42	4.18	0.23	1 / 8	5.22	--	--	--	YES
Sodium [2]	-- - --	8 / 8	6,360,000	YSA14-SW03-1207	5,752,500	542,659	6,115,992	5,727,812	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Thallium	6.60 - 125	0 / 8	--	--	47.8	27.2	66.0	30.7	21.3	-- / --	5.87	2.24	3.10	1.44	NO[3]
Vanadium	50.0 - 50.0	0 / 8	--	--	25.0	0.00	25.0	25.0	20.0	-- / --	2.50	1.25	1.25	1.25	NO[3]
Zinc	60.0 - 60.0	0 / 8	--	--	30.0	0.0	30.0	30.0	85.6	-- / --	0.70	0.35	0.35	0.35	NO
Dissolved Metals (UG/L)															
Aluminum	101 - 125	5 / 8	317	YSA14-SW01-1207	153	108	226	122	87.0	5 / 8	3.64	1.76	2.59	1.40	YES
Antimony	60.0 - 60.0	0 / 8	--	--	30.0	0.0	30.0	30.0	500	-- / --	0.12	0.06	0.06	0.06	NO
Arsenic	3.60 - 10.0	2 / 8	5.90	YS08-SW04-1207	3.96	1.71	5.11	3.57	36.0	0 / 8	0.16	0.11	0.14	0.10	NO
Barium	-- - --	8 / 8	35.3	YS08-SW01-1207	33.0	2.06	34.3	32.9	4.00	8 / 8	8.83	8.24	8.58	8.22	YES
Beryllium	5.00 - 5.00	0 / 8	--	--	2.50	0.0	2.50	2.50	0.66	-- / --	7.58	3.79	3.79	3.79	NO[3]
Cadmium	0.71 - 0.93	4 / 8	0.92	YS08-SW02-1207	0.52	0.20	0.66	0.50	8.80	0 / 8	0.10	0.06	0.07	0.06	NO
Calcium [2]	-- - --	8 / 8	234,000	YS08-SW03-1207	221,125	9,493	227,484	220,945	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chromium	0.35 - 10.0	0 / 8	--	--	4.40	1.71	5.54	3.29	50.0	-- / --	0.20	0.09	0.11	0.07	NO
Cobalt	50.0 - 50.0	0 / 8	--	--	25.0	0.0	25.0	25.0	23.0	-- / --	2.17	1.09	1.09	1.09	NO[3]

NSV - No Screening Value
1 - Shaded cells indicate hazard quotient based on reporting limits
2 - Macronutrient - Not considered to be a COPC
3 - See Uncertainties

Table 8-14
Screening Statistics - Sites 8 and 34 - Surface Water
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Normal Distribution)	Geometric Mean	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Copper	25.0 - 25.0	1 / 8	3.20	YSA14-SW01-1207	11.3	3.29	13.5	10.5	3.10	1 / 8	1.03	--	--	--	YES
Iron	22.7 - 100	2 / 8	77.4	YS08-SW01-1207	33.1	22.4	48.1	27.5	1,000	0 / 8	0.08	0.03	0.05	0.03	NO
Lead	10.0 - 50.0	0 / 8	--	--	20.0	9.26	26.2	16.7	8.10	-- / --	6.17	2.47	3.23	2.06	NO[3]
Magnesium [2]	-- - --	8 / 8	667,000	YSA14-SW03-1207	623,125	40,825	650,471	621,919	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Manganese	-- - --	8 / 8	62	YSA14-SW01-1207	37.9	11.8	45.8	36.5	120	0 / 8	0.52	0.32	0.38	0.30	NO
Mercury	0.20 - 0.20	0 / 8	--	--	0.10	0.0	0.10	0.10	0.94	-- / --	0.21	0.11	0.11	0.11	NO
Nickel	40.0 - 40.0	2 / 8	1.40	YSA14-SW02-1207	15.3	8.72	21.1	9.77	8.20	0 / 8	0.17	--	--	--	NO
Potassium [2]	-- - --	8 / 8	224,000	YS08-SW03-1207	204,250	24,271	220,507	202,886	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Selenium	35.0 - 35.0	0 / 8	--	--	17.5	0.0	17.5	17.5	71.0	-- / --	0.49	0.25	0.25	0.25	NO
Silver	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	0.23	-- / --	43.5	21.7	21.7	21.7	NO[3]
Sodium [2]	-- - --	8 / 8	6,230,000	YS08-SW02-1207	5,676,250	654,041	6,114,349	5,640,508	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Thallium	4.90 - 125	0 / 8	--	--	47.6	27.6	66.1	28.6	21.3	-- / --	5.87	2.23	3.10	1.34	NO[3]
Vanadium	50.0 - 50.0	0 / 8	--	--	25.0	0.0	25.0	25.0	20.0	-- / --	2.50	1.25	1.25	1.25	NO[3]
Zinc	60.0 - 60.0	1 / 8	8.10	YS08-SW03-1207	27.3	7.74	32.4	25.5	81.0	0 / 8	0.10	--	--	--	NO
Pesticide/Polychlorinated Biphenyls (UG/L)															
4,4'-DDD	0.094 - 0.10	0 / 8	--	--	0.048	0.0013	0.049	0.048	0.025	-- / --	3.96	1.92	1.95	1.92	NO[3]
4,4'-DDE	0.094 - 0.10	0 / 8	--	--	0.048	0.0013	0.049	0.048	0.14	-- / --	0.71	0.34	0.35	0.34	NO
4,4'-DDT	0.094 - 0.10	0 / 8	--	--	0.048	0.0013	0.049	0.048	0.0065	-- / --	15.2	7.38	7.51	7.37	NO[3]
Aldrin	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	0.13	-- / --	0.38	0.19	0.19	0.19	NO
Aroclor-1016	0.94 - 0.99	0 / 8	--	--	0.48	0.013	0.49	0.48	0.030	-- / --	33.0	16.0	16.3	16.0	NO[3]
Aroclor-1221	1.90 - 2.00	0 / 8	--	--	0.97	0.026	0.99	0.97	0.030	-- / --	66.7	32.3	32.9	32.3	NO[3]
Aroclor-1232	0.94 - 0.99	0 / 8	--	--	0.48	0.013	0.49	0.48	0.030	-- / --	33.0	16.0	16.3	16.0	NO[3]
Aroclor-1242	0.94 - 0.99	0 / 8	--	--	0.48	0.013	0.49	0.48	0.030	-- / --	33.0	16.0	16.3	16.0	NO[3]
Aroclor-1248	0.94 - 0.99	0 / 8	--	--	0.48	0.013	0.49	0.48	0.030	-- / --	33.0	16.0	16.3	16.0	NO[3]
Aroclor-1254	0.94 - 0.99	0 / 8	--	--	0.48	0.013	0.49	0.48	0.030	-- / --	33.0	16.0	16.3	16.0	NO[3]
Aroclor-1260	0.94 - 0.99	0 / 8	--	--	0.48	0.013	0.49	0.48	0.030	-- / --	33.0	16.0	16.3	16.0	NO[3]
Dieldrin	0.094 - 0.10	0 / 8	--	--	0.048	0.0013	0.049	0.048	0.11	-- / --	0.90	0.44	0.44	0.44	NO
Endosulfan I	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	0.0087	-- / --	5.75	2.77	2.83	2.76	NO[3]
Endosulfan II	0.094 - 0.10	0 / 8	--	--	0.048	0.0013	0.049	0.048	0.0087	-- / --	11.4	5.51	5.61	5.51	NO[3]
Endosulfan sulfate	0.094 - 0.10	0 / 8	--	--	0.048	0.0013	0.049	0.048	0.0087	-- / --	11.4	5.51	5.61	5.51	NO[3]
Endrin	0.094 - 0.10	0 / 8	--	--	0.048	0.0013	0.049	0.048	0.010	-- / --	9.9	4.79	4.88	4.79	NO[3]
Endrin aldehyde	0.094 - 0.10	0 / 8	--	--	0.048	0.0013	0.049	0.048	0.010	-- / --	9.9	4.79	4.88	4.79	NO[3]
Endrin ketone	0.094 - 0.10	0 / 8	--	--	0.048	0.0013	0.049	0.048	0.010	-- / --	9.9	4.79	4.88	4.79	NO[3]

NSV - No Screening Value
1 - Shaded cells indicate hazard quotient based on reporting limits
2 - Macronutrient - Not considered to be a COPC
3 - See Uncertainties

Table 8-14
Screening Statistics - Sites 8 and 34 - Surface Water
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Normal Distribution)	Geometric Mean	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Heptachlor	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	0.0036	-- / --	13.9	6.68	6.83	6.68	NO[3]
Heptachlor epoxide	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	0.0036	-- / --	13.9	6.68	6.83	6.68	NO[3]
Methoxychlor	0.47 - 0.50	0 / 8	--	--	0.24	0.0078	0.246	0.241	0.030	-- / --	16.7	8.02	8.19	8.02	NO[3]
Toxaphene	4.70 - 5.00	0 / 8	--	--	2.41	0.078	2.46	2.41	0.21	-- / --	23.8	11.5	11.7	11.5	NO[3]
alpha-BHC	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	25.0	-- / --	0.002	0.001	0.001	0.001	NO
alpha-Chlordane	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	0.004	-- / --	12.5	6.02	6.15	6.01	NO[3]
beta-BHC	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	2.20	-- / --	0.02	0.01	0.01	0.01	NO
delta-BHC	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	2.20	-- / --	0.02	0.01	0.01	0.01	NO
gamma-BHC (Lindane)	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	0.016	-- / --	3.13	1.50	1.54	1.50	NO[3]
gamma-Chlordane	0.047 - 0.05	0 / 8	--	--	0.024	0.0008	0.025	0.024	0.004	-- / --	12.5	6.02	6.15	6.01	NO[3]
Semivolatile Organic Compounds (UG/L)															
1,1-Biphenyl	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	14.0	-- / --	0.70	0.35	0.35	0.35	NO
2,2'-Oxybis(1-chloropropane)	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2,4,5-Trichlorophenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	12.0	-- / --	0.82	0.40	0.41	0.40	NO
2,4,6-Trichlorophenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	61.0	-- / --	0.16	0.08	0.08	0.08	NO
2,4-Dichlorophenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	11.0	-- / --	0.89	0.44	0.44	0.44	NO
2,4-Dimethylphenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	110	-- / --	0.09	0.04	0.04	0.04	NO
2,4-Dinitrophenol	47.0 - 49.0	0 / 7	--	--	24.4	0.38	24.6	24.4	48.5	-- / --	1.01	0.50	0.51	0.50	NO
2,4-Dinitrotoluene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	37.0	-- / --	0.26	0.13	0.13	0.13	NO
2,6-Dinitrotoluene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	81.0	-- / --	0.12	0.06	0.06	0.06	NO
2-Chloronaphthalene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2-Chlorophenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	265	-- / --	0.04	0.02	0.02	0.02	NO
2-Methylphenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	1,020	-- / --	0.010	0.005	0.005	0.005	NO
2-Nitroaniline	47.0 - 49.0	0 / 7	--	--	24.4	0.38	24.6	24.4	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2-Nitrophenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	2,940	-- / --	0.003	0.002	0.002	0.002	NO
3,3'-Dichlorobenzidine	19.0 - 20.0	0 / 7	--	--	9.57	0.19	9.71	9.57	73.0	-- / --	0.27	0.13	0.13	0.13	NO
3-Nitroaniline	47.0 - 49.0	0 / 7	--	--	24.4	0.38	24.6	24.4	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4,6-Dinitro-2-methylphenol	47.0 - 49.0	0 / 7	--	--	24.4	0.38	24.6	24.4	2.30	-- / --	21.3	10.6	10.7	10.6	NO[3]
4-Bromophenyl-phenylether	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	1.50	-- / --	6.53	3.22	3.25	3.22	NO[3]
4-Chloro-3-methylphenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	0.30	-- / --	32.7	16.1	16.3	16.1	NO[3]
4-Chloroaniline	19.0 - 20.0	0 / 7	--	--	9.57	0.19	9.71	9.57	232	-- / --	0.09	0.04	0.04	0.04	NO
4-Chlorophenyl-phenylether	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Methylphenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	543	-- / --	0.018	0.009	0.009	0.009	NO
4-Nitroaniline	47.0 - 49.0	0 / 7	--	--	24.4	0.38	24.6	24.4	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Nitrophenol	47.0 - 49.0	0 / 7	--	--	24.4	0.38	24.6	24.4	71.7	-- / --	0.68	0.34	0.34	0.34	NO

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Table 8-14
Screening Statistics - Sites 8 and 34 - Surface Water
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Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Normal Distribution)	Geometric Mean	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Acenaphthene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	40.0	-- / --	0.25	0.12	0.12	0.12	NO
Acenaphthylene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Acetophenone	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Anthracene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	0.18	-- / --	54.4	26.9	27.1	26.9	NO[3]
Atrazine	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	1.80	-- / --	5.44	2.69	2.71	2.69	NO[3]
Benzaldehyde	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Benzo(a)anthracene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	0.027	-- / --	363	179	181	179	NO[3]
Benzo(a)pyrene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	0.014	-- / --	700	345	349	345	NO[3]
Benzo(b)fluoranthene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Benzo(g,h,i)perylene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Benzo(k)fluoranthene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Butylbenzylphthalate	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	29.4	-- / --	0.33	0.16	0.17	0.16	NO
Caprolactam	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Carbazole	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chrysene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Di-n-butylphthalate	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	3.40	-- / --	2.88	1.42	1.44	1.42	NO[3]
Di-n-octylphthalate	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	22.0	-- / --	0.45	0.22	0.22	0.22	NO
Dibenz(a,h)anthracene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dibenzofuran	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	65.0	-- / --	0.15	0.07	0.08	0.07	NO
Diethylphthalate	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	75.9	-- / --	0.13	0.06	0.06	0.06	NO
Dimethyl phthalate	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	580	-- / --	0.017	0.008	0.008	0.008	NO
Fluoranthene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	11.0	-- / --	0.89	0.44	0.44	0.44	NO
Fluorene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	2.50	-- / --	3.92	1.93	1.95	1.93	NO[3]
Hexachlorobenzene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	3.68	-- / --	2.66	1.31	1.33	1.31	NO[3]
Hexachlorobutadiene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	0.32	-- / --	30.6	15.1	15.3	15.1	NO[3]
Hexachlorocyclopentadiene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	0.070	-- / --	140	69.1	69.7	69.1	NO[3]
Hexachloroethane	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	9.40	-- / --	1.04	0.51	0.52	0.51	NO
Indeno(1,2,3-cd)pyrene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Isophorone	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	129	-- / --	0.08	0.04	0.04	0.04	NO
Naphthalene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	23.5	-- / --	0.42	0.21	0.21	0.21	NO
Nitrobenzene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	66.8	-- / --	0.15	0.07	0.07	0.07	NO
Pentachlorophenol	47.0 - 49.0	0 / 7	--	--	24.4	0.38	24.6	24.4	7.90	-- / --	6.20	3.08	3.12	3.08	NO[3]
Phenanthrene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	8.30	-- / --	1.18	0.58	0.59	0.58	NO
Phenol	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	58.0	-- / --	0.17	0.08	0.08	0.08	NO
Pyrene	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	0.24	-- / --	40.8	20.1	20.3	20.1	NO[3]

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Screening Statistics - Sites 8 and 34 - Surface Water
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Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Normal Distribution)	Geometric Mean	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
bis(2-Chloroethoxy)methane	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	NSV	-- / --	NSV	NSV	NSV	NSV	NO
bis(2-Chloroethyl)ether	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	2,380	-- / --	0.004	0.002	0.002	0.002	NO
bis(2-Ethylhexyl)phthalate	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	360	-- / --	0.03	0.01	0.01	0.01	NO
n-Nitroso-di-n-propylamine	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	120	-- / --	0.08	0.04	0.04	0.04	NO
n-Nitrosodiphenylamine	9.40 - 9.80	0 / 7	--	--	4.84	0.063	4.88	4.84	33,000	-- / --	0.0003	0.0001	0.0001	0.0001	NO
Explosives (UG/L)															
1,3,5-Trinitrobenzene	0.098 - 0.10	0 / 8	--	--	0.050	0.0004	0.050	0.050	11.0	-- / --	0.009	0.005	0.005	0.005	NO
1,3-Dinitrobenzene	0.15 - 0.16	0 / 8	--	--	0.076	0.0018	0.077	0.076	17.0	-- / --	0.009	0.004	0.005	0.004	NO
2,4,6-Trinitrotoluene	0.15 - 0.16	0 / 8	--	--	0.076	0.0018	0.077	0.076	100	-- / --	0.002	0.001	0.001	0.001	NO
2,4-Dinitrotoluene	0.15 - 0.16	0 / 8	--	--	0.076	0.0018	0.077	0.076	37.0	-- / --	0.004	0.002	0.002	0.002	NO
2,6-Dinitrotoluene	0.15 - 0.16	0 / 8	--	--	0.076	0.0018	0.077	0.076	81.0	-- / --	0.002	0.001	0.001	0.001	NO
2-Amino-4,6-dinitrotoluene	0.29 - 0.32	0 / 8	--	--	0.15	0.004	0.153	0.151	1,480	-- / --	0.0002	0.0001	0.0001	0.0001	NO
2-Nitrotoluene	0.49 - 0.52	0 / 8	--	--	0.25	0.0042	0.253	0.251	NSV	-- / --	NSV	NSV	NSV	NSV	NO
3,5-Dinitroaniline	0.98 - 1.00	0 / 8	--	--	0.50	0.0038	0.500	0.497	59.0	-- / --	0.017	0.008	0.008	0.008	NO
3-Nitrotoluene	0.49 - 0.52	0 / 8	--	--	0.25	0.0042	0.253	0.251	750	-- / --	0.0007	0.0003	0.0003	0.0003	NO
4-Amino-2,6-dinitrotoluene	0.15 - 0.16	0 / 8	--	--	0.076	0.0018	0.077	0.076	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Nitrotoluene	0.49 - 0.52	0 / 8	--	--	0.25	0.0042	0.253	0.251	1,900	-- / --	0.0003	0.0001	0.0001	0.0001	NO
HMX	0.15 - 0.15	1 / 8	0.21	YS08-SW04-1207	0.09	0.05	0.12	0.09	330	0 / 8	0.001	0.0003	0.0004	0.0003	NO
Nitrobenzene	0.15 - 0.16	1 / 8	0.050	YSA14-SW02-1207	0.073	0.0093	0.079	0.072	66.8	0 / 8	0.0007	--	--	--	NO
Nitroglycerin	0.98 - 1.00	0 / 8	--	--	0.50	0.0038	0.500	0.497	NSV	-- / --	NSV	NSV	NSV	NSV	NO
PETN	0.98 - 1.00	0 / 8	--	--	0.50	0.0038	0.500	0.497	85,000	-- / --	0.000012	0.000006	0.000006	0.000006	NO
RDX	0.24 - 0.25	1 / 8	0.04	YS08-SW04-1207	0.11	0.03	0.13	0.11	186	0 / 8	0.0002	--	--	--	NO
Tetryl	0.15 - 0.16	0 / 7	--	--	0.076	0.0019	0.077	0.076	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Volatile Organic Compounds (UG/L)															
1,1,1-Trichloroethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	312	-- / --	0.03	0.02	0.02	0.02	NO
1,1,2,2-Tetrachloroethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	90.2	-- / --	0.11	0.06	0.06	0.06	NO
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,1,2-Trichloroethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	550	-- / --	0.018	0.009	0.009	0.009	NO
1,1-Dichloroethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	47.0	-- / --	0.21	0.11	0.11	0.11	NO
1,1-Dichloroethene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	2,240	-- / --	0.004	0.002	0.002	0.002	NO
1,2,4-Trichlorobenzene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	4.50	-- / --	2.22	1.11	1.11	1.11	NO[3]
1,2-Dibromo-3-chloropropane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dibromoethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dichlorobenzene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	19.7	-- / --	0.51	0.25	0.25	0.25	NO
1,2-Dichloroethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	1,130	-- / --	0.009	0.004	0.004	0.004	NO
1,2-Dichloropropane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	2,400	-- / --	0.004	0.002	0.002	0.002	NO
1,3-Dichlorobenzene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	28.5	-- / --	0.35	0.18	0.18	0.18	NO

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1,4-Dichlorobenzene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	19.9	-- / --	0.50	0.25	0.25	0.25	NO
2-Butanone	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	14,000	-- / --	0.0007	0.0004	0.0004	0.0004	NO
2-Hexanone	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	99.0	-- / --	0.10	0.05	0.05	0.05	NO
4-Methyl-2-pentanone	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	170	-- / --	0.059	0.029	0.029	0.029	NO
Acetone	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	1,500	-- / --	0.007	0.003	0.003	0.003	NO
Benzene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	109	-- / --	0.092	0.046	0.046	0.046	NO
Bromodichloromethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Bromoform	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	640	-- / --	0.016	0.008	0.008	0.008	NO
Bromomethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	120	-- / --	0.083	0.042	0.042	0.042	NO
Carbon disulfide	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	0.92	-- / --	10.9	5.43	5.43	5.43	NO[3]
Carbon tetrachloride	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	1,500	-- / --	0.007	0.003	0.003	0.003	NO
Chlorobenzene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	105	-- / --	0.095	0.048	0.048	0.048	NO
Chloroethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chloroform	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	815	-- / --	0.012	0.006	0.006	0.006	NO
Chloromethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	2,700	-- / --	0.004	0.002	0.002	0.002	NO
Cyclohexane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dibromochloromethane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dichlorodifluoromethane (Freon-12)	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Ethylbenzene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	25.0	-- / --	0.40	0.20	0.20	0.20	NO
Isopropylbenzene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methyl acetate	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methyl-tert-butyl ether (MTBE)	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	11,070	-- / --	0.0009	0.0005	0.0005	0.0005	NO
Methylcyclohexane	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methylene chloride	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	2,560	-- / --	0.004	0.002	0.002	0.002	NO
Styrene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	910	-- / --	0.011	0.005	0.005	0.005	NO
Tetrachloroethene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	45.0	-- / --	0.22	0.11	0.11	0.11	NO
Toluene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	215	-- / --	0.047	0.023	0.023	0.023	NO
Trichloroethene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	1,940	-- / --	0.005	0.003	0.003	0.003	NO
Trichlorofluoromethane(Freon-11)	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Vinyl chloride	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	930	-- / --	0.011	0.005	0.005	0.005	NO
Xylene, total	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	19.0	-- / --	0.53	0.26	0.26	0.26	NO
cis-1,2-Dichloroethene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	680	-- / --	0.015	0.007	0.007	0.007	NO
cis-1,3-Dichloropropene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	7.90	-- / --	1.27	0.63	0.63	0.63	NO
trans-1,2-Dichloroethene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	680	-- / --	0.015	0.007	0.007	0.007	NO
trans-1,3-Dichloropropene	10.0 - 10.0	0 / 8	--	--	5.00	0.0	5.00	5.00	7.90	-- / --	1.27	0.63	0.63	0.63	NO

NSV - No Screening Value
1 - Shaded cells indicate hazard quotient based on reporting limits
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Table 8-15
Screening Statistics - Sites 8 and 34 - Sediment
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Normal Distribution)	Geometric Mean	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Inorganics (MG/KG)															
Aluminum	-- - --	8 / 8	26,500	YS08-SD04-1207	18,424	5,600	22,175	17,322	18,000	7 / 8	1.47	1.02	1.23	0.96	YES
Antimony	1.50 - 13.4	0 / 8	--	--	4.48	2.40	6.08	3.46	2.00	-- / --	6.70	2.24	3.04	1.73	NO[3]
Arsenic	-- - --	8 / 8	13.4	YS08-SD04-1207	10.7	2.05	12.1	10.6	8.20	8 / 8	1.63	1.31	1.48	1.29	YES
Barium	-- - --	8 / 8	46.6	YS08-SD04-1207	34.9	9.86	41.5	33.0	48.0	0 / 8	0.97	0.73	0.86	0.69	NO
Beryllium	-- - --	8 / 8	1.10	YS08-SD04-1207	0.83	0.24	1.00	0.79	NSV	-- / --	NSV	NSV	NSV	NSV	YES
Cadmium	0.32 - 1.10	5 / 8	0.32	YSA14-SD03-1207	0.23	0.15	0.33	0.19	1.20	0 / 8	0.27	0.19	0.28	0.16	NO
Calcium [2]	-- - --	8 / 8	3,920	YSA14-SD02-1207	2,485	611	2,894	2,432	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chromium	-- - --	8 / 8	47.9	YS08-SD04-1207	37.7	9.46	44.1	36.2	81.0	0 / 8	0.59	0.47	0.54	0.45	NO
Cobalt	-- - --	8 / 8	10.5	YS08-SD04-1207	7.43	2.00	8.76	7.12	10.0	1 / 8	1.05	0.74	0.88	0.71	NO
Copper	-- - --	8 / 8	19.2	YSA14-SD03-1207	14.7	4.86	17.9	13.7	34.0	0 / 8	0.56	0.43	0.53	0.40	NO
Cyanide	4.10 - 6.40	0 / 8	--	--	2.79	0.34	3.02	2.77	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Iron	-- - --	8 / 8	50,300	YS08-SD04-1207	34,938	7,380	39,881	34,315	220,000	0 / 8	0.23	0.16	0.18	0.16	NO
Lead	-- - --	8 / 8	32.9	YSA14-SD03-1207	25.9	8.39	31.5	24.1	46.7	0 / 8	0.70	0.56	0.68	0.52	NO
Magnesium [2]	-- - --	8 / 8	7,670	YS08-SD04-1207	6,259	1,642	7,359	5,968	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Manganese	-- - --	8 / 8	412	YS08-SD04-1207	271	108	343	249	260	3 / 8	1.58	1.04	1.32	0.96	YES
Mercury	0.05 - 0.13	4 / 8	0.16	YSA14-SD03-1207	0.09	0.05	0.12	0.07	0.15	1 / 8	1.07	0.58	0.80	0.48	NO
Nickel	-- - --	8 / 8	19.5	YS08-SD04-1207	15.4	4.23	18.3	14.7	20.9	0 / 8	0.93	0.74	0.87	0.70	NO
Potassium [2]	-- - --	8 / 8	4,800	YS08-SD04-1207	3,841	818	4,389	3,741	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Selenium	0.57 - 7.9	0 / 8	--	--	1.62	1.74	2.78	0.86	1.00	-- / --	7.9	1.62	2.78	0.86	NO[3]
Silver	2.10 - 2.20	6 / 8	1.20	YSA14-SD01-1207	0.74	0.40	1.01	0.60	1.00	2 / 8	1.20	0.74	1.01	0.60	YES
Sodium [2]	-- - --	8 / 8	12,600	YS08-SD01-1207	9,915	3,085	11,981	9,274	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Thallium	3.40 - 5.60	0 / 8	--	--	2.48	0.37	2.72	2.45	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Vanadium	-- - --	8 / 8	60.9	YS08-SD04-1207	46.2	12.2	54.4	44.1	57.0	1 / 8	1.07	0.81	0.95	0.77	NO
Zinc	-- - --	8 / 8	129	YSA14-SD03-1207	90.7	32.6	113	84.2	150	0 / 8	0.86	0.60	0.75	0.56	NO
Pesticide/Polychlorinated Biphenyls (UG/KG)															
4,4'-DDD	6.30 - 10.0	0 / 8	--	--	4.52	0.58	4.91	4.48	2.00	-- / --	5.00	2.26	2.45	2.24	NO[3]
4,4'-DDE	6.30 - 10.0	0 / 8	--	--	4.52	0.58	4.91	4.48	2.20	-- / --	4.55	2.05	2.23	2.04	NO[3]
4,4'-DDT	6.30 - 10.0	0 / 8	--	--	4.52	0.58	4.91	4.48	1.00	-- / --	10.0	4.52	4.91	4.48	NO[3]
Aldrin	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	9.50	-- / --	0.56	0.25	0.27	0.24	NO
Aroclor-1016	63.0 - 100	0 / 8	--	--	45.2	5.79	49.1	44.8	40.0	-- / --	2.50	1.13	1.23	1.12	NO[3]
Aroclor-1221	130 - 210	0 / 8	--	--	93.1	12.2	101	92.3	40.0	-- / --	5.25	2.33	2.53	2.31	NO[3]
Aroclor-1232	63.0 - 100	0 / 8	--	--	45.2	5.79	49.1	44.8	40.0	-- / --	2.50	1.13	1.23	1.12	NO[3]
Aroclor-1242	63.0 - 100	0 / 8	--	--	45.2	5.79	49.1	44.8	40.0	-- / --	2.50	1.13	1.23	1.12	NO[3]
Aroclor-1248	63.0 - 100	0 / 8	--	--	45.2	5.79	49.1	44.8	40.0	-- / --	2.50	1.13	1.23	1.12	NO[3]

NSV - No Screening Value
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Table 8-15
Screening Statistics - Sites 8 and 34 - Sediment
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Normal Distribution)	Geometric Mean	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Aroclor-1254	63.0 - 100	0 / 8	--	--	45.2	5.79	49.1	44.8	40.0	-- / --	2.50	1.13	1.23	1.12	NO[3]
Aroclor-1260	63.0 - 100	0 / 8	--	--	45.2	5.79	49.1	44.8	40.0	-- / --	2.50	1.13	1.23	1.12	NO[3]
Dieldrin	6.30 - 10.0	0 / 8	--	--	4.52	0.58	4.91	4.48	0.72	-- / --	13.9	6.28	6.81	6.22	NO[3]
Endosulfan I	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	10.0	-- / --	0.53	0.23	0.25	0.23	NO
Endosulfan II	6.30 - 10.0	0 / 8	--	--	4.52	0.58	4.91	4.48	10.0	-- / --	1.00	0.45	0.49	0.45	NO
Endosulfan sulfate	6.30 - 10.0	0 / 8	--	--	4.52	0.58	4.91	4.48	10.0	-- / --	1.00	0.45	0.49	0.45	NO
Endrin	6.30 - 10.0	0 / 8	--	--	4.52	0.58	4.91	4.48	2.67	-- / --	3.75	1.69	1.84	1.68	NO[3]
Endrin aldehyde	6.30 - 10.0	0 / 8	--	--	4.52	0.58	4.91	4.48	2.67	-- / --	3.75	1.69	1.84	1.68	NO[3]
Endrin ketone	6.30 - 10.0	0 / 8	--	--	4.52	0.58	4.91	4.48	2.67	-- / --	3.75	1.69	1.84	1.68	NO[3]
Heptachlor	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	0.30	-- / --	17.7	7.81	8.49	7.75	NO[3]
Heptachlor epoxide	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	0.60	-- / --	8.8	3.91	4.24	3.87	NO[3]
Methoxychlor	33.0 - 53.0	0 / 8	--	--	23.4	3.02	25.5	23.2	29.6	-- / --	1.79	0.79	0.86	0.79	NO
Toxaphene	330 - 530	0 / 8	--	--	234	30.2	255	232	536	-- / --	0.99	0.44	0.47	0.43	NO
alpha-BHC	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	6.00	-- / --	0.88	0.39	0.42	0.39	NO
alpha-Chlordane	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	2.26	-- / --	2.35	1.04	1.13	1.03	NO[3]
beta-BHC	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	5.00	-- / --	1.06	0.47	0.51	0.46	NO
delta-BHC	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	5.00	-- / --	1.06	0.47	0.51	0.46	NO
gamma-BHC (Lindane)	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	0.32	-- / --	16.6	7.32	7.96	7.26	NO[3]
gamma-Chlordane	3.30 - 5.30	0 / 8	--	--	2.34	0.30	2.55	2.32	2.26	-- / --	2.35	1.04	1.13	1.03	NO[3]
Semivolatile Organic Compounds (UG/KG)															
1,1-Biphenyl	1,300 - 2,100	0 / 8	--	--	919	119	999	911	1,100	-- / --	1.91	0.84	0.91	0.83	NO
2,2'-Oxybis(1-chloropropane)	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2,4,5-Trichlorophenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	819	-- / --	2.56	1.12	1.22	1.11	NO[3]
2,4,6-Trichlorophenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	2,647	-- / --	0.79	0.35	0.38	0.34	NO
2,4-Dichlorophenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	117	-- / --	17.9	7.85	8.54	7.79	NO[3]
2,4-Dimethylphenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	29.0	-- / --	72.4	31.7	34.4	31.4	NO[3]
2,4-Dinitrophenol	6,500 - 11,000	0 / 8	--	--	4,694	650	5,129	4,648	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2,4-Dinitrotoluene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	41.6	-- / --	50.4	22.1	24.0	21.9	NO[3]
2,6-Dinitrotoluene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2-Chloronaphthalene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2-Chlorophenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	344	-- / --	6.10	2.67	2.90	2.65	NO[3]
2-Methylnaphthalene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	20.2	-- / --	104	45.5	49.4	45.1	NO[3]
2-Methylphenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	63.0	-- / --	33.3	14.6	15.9	14.5	NO[3]
2-Nitroaniline	6,500 - 11,000	0 / 8	--	--	4,694	650	5,129	4,648	NSV	-- / --	NSV	NSV	NSV	NSV	NO

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2-Nitrophenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
3,3'-Dichlorobenzidine	1,300 - 2,100	0 / 8	--	--	919	119	999	911	2,060	-- / --	1.02	0.45	0.48	0.44	NO
3-Nitroaniline	6,500 - 11,000	0 / 8	--	--	4,694	650	5,129	4,648	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4,6-Dinitro-2-methylphenol	6,500 - 11,000	0 / 8	--	--	4,694	650	5,129	4,648	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Bromophenyl-phenylether	1,300 - 2,100	0 / 8	--	--	919	119	999	911	1,300	-- / --	1.62	0.71	0.77	0.70	NO
4-Chloro-3-methylphenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Chloroaniline	2,500 - 4,100	0 / 8	--	--	1,806	244	1,970	1,789	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Chlorophenyl-phenylether	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Methylphenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	670	-- / --	3.13	1.37	1.49	1.36	NO[3]
4-Nitroaniline	6,500 - 11,000	0 / 8	--	--	4,694	650	5,129	4,648	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Nitrophenol	6,500 - 11,000	0 / 8	--	--	4,694	650	5,129	4,648	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Acenaphthene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	16.0	-- / --	131	57.4	62.4	56.9	NO[3]
Acenaphthylene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	44.0	-- / --	47.7	20.9	22.7	20.7	NO[3]
Acetophenone	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Anthracene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	85.3	-- / --	24.6	10.8	11.7	10.7	NO[3]
Atrazine	1,300 - 2,100	0 / 8	--	--	919	119	999	911	6.62	-- / --	317	139	151	138	NO[3]
Benzaldehyde	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Benzo(a)anthracene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	261	-- / --	8.05	3.52	3.83	3.49	NO[3]
Benzo(a)pyrene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	430	-- / --	4.88	2.14	2.32	2.12	NO[3]
Benzo(b)fluoranthene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	1,800	-- / --	1.17	0.51	0.55	0.51	NO
Benzo(g,h,i)perylene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	670	-- / --	3.13	1.37	1.49	1.36	NO[3]
Benzo(k)fluoranthene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	1,800	-- / --	1.17	0.51	0.55	0.51	NO
Butylbenzylphthalate	1,300 - 2,100	0 / 8	--	--	919	119	999	911	63.0	-- / --	33.3	14.6	15.9	14.5	NO[3]
Caprolactam	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Carbazole	1,300 - 2,100	0 / 8	--	--	919	119	999	911	1,800	-- / --	1.17	0.51	0.55	0.51	NO
Chrysene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	384	-- / --	5.47	2.39	2.60	2.37	NO[3]
Di-n-butylphthalate	1,300 - 2,100	0 / 8	--	--	919	119	999	911	1,157	-- / --	1.82	0.79	0.86	0.79	NO
Di-n-octylphthalate	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dibenz(a,h)anthracene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	63.4	-- / --	33.1	14.5	15.8	14.4	NO[3]
Dibenzofuran	1,300 - 2,100	0 / 8	--	--	919	119	999	911	7,297	-- / --	0.29	0.13	0.14	0.12	NO
Diethylphthalate	1,300 - 2,100	0 / 8	--	--	919	119	999	911	218	-- / --	9.6	4.21	4.58	4.18	NO[3]
Dimethyl phthalate	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Fluoranthene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	600	-- / --	3.50	1.53	1.66	1.52	NO[3]
Fluorene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	19.0	-- / --	111	48.4	52.6	47.9	NO[3]

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Table 8-15
Screening Statistics - Sites 8 and 34 - Sediment
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Normal Distribution)	Geometric Mean	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Hexachlorobenzene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	20.0	-- / --	105	45.9	49.9	45.5	NO[3]
Hexachlorobutadiene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Hexachlorocyclopentadiene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Hexachloroethane	1,300 - 2,100	0 / 8	--	--	919	119	999	911	73.0	-- / --	28.8	12.6	13.7	12.5	NO[3]
Indeno(1,2,3-cd)pyrene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	600	-- / --	3.50	1.53	1.66	1.52	NO[3]
Isophorone	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Naphthalene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	160	-- / --	13.1	5.74	6.24	5.69	NO[3]
Nitrobenzene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	21.0	-- / --	100	43.8	47.6	43.4	NO[3]
Pentachlorophenol	6,500 - 11,000	0 / 8	--	--	4,694	650	5,129	4,648	360	-- / --	30.6	13.0	14.2	12.9	NO[3]
Phenanthrene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	240	-- / --	8.8	3.83	4.16	3.80	NO[3]
Phenol	1,300 - 2,100	0 / 8	--	--	919	119	999	911	420	-- / --	5.00	2.19	2.38	2.17	NO[3]
Pyrene	1,300 - 2,100	0 / 8	--	--	919	119	999	911	665	-- / --	3.16	1.38	1.50	1.37	NO[3]
bis(2-Chloroethoxy)methane	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
bis(2-Chloroethyl)ether	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
bis(2-Ethylhexyl)phthalate	1,300 - 2,100	0 / 8	--	--	919	119	999	911	182	-- / --	11.5	5.05	5.49	5.00	NO[3]
n-Nitroso-di-n-propylamine	1,300 - 2,100	0 / 8	--	--	919	119	999	911	NSV	-- / --	NSV	NSV	NSV	NSV	NO
n-Nitrosodiphenylamine	1,300 - 2,100	0 / 8	--	--	919	119	999	911	28.0	-- / --	75.0	32.8	35.7	32.5	NO[3]
Explosives (UG/KG)															
1,3,5-Trinitrobenzene	250 - 250	0 / 8	--	--	125	0.0	125	125	2.40	-- / --	104	52.1	52.1	52.1	NO[3]
1,3-Dinitrobenzene	250 - 250	0 / 8	--	--	125	0.0	125	125	6.70	-- / --	37.3	18.7	18.7	18.7	NO[3]
2,4,6-Trinitrotoluene	250 - 250	0 / 8	--	--	125	0.0	125	125	92.0	-- / --	2.72	1.36	1.36	1.36	NO[3]
2,4-Dinitrotoluene	250 - 250	0 / 8	--	--	125	0.0	125	125	41.6	-- / --	6.00	3.00	3.00	3.00	NO[3]
2,6-Dinitrotoluene	250 - 250	0 / 8	--	--	125	0.0	125	125	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2-Amino-4,6-dinitrotoluene	300 - 300	0 / 8	--	--	150	0.0	150	150	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2-Nitrotoluene	250 - 250	0 / 8	--	--	125	0.0	125	125	NSV	-- / --	NSV	NSV	NSV	NSV	NO
3,5-Dinitroaniline	1,300 - 1,300	0 / 8	--	--	650	0.0	650	650	NSV	-- / --	NSV	NSV	NSV	NSV	NO
3-Nitrotoluene	250 - 250	0 / 8	--	--	125	0.0	125	125	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Amino-2,6-dinitrotoluene	250 - 250	0 / 8	--	--	125	0.0	125	125	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Nitrotoluene	500 - 500	0 / 8	--	--	250	0.0	250	250	4,062	-- / --	0.12	0.06	0.06	0.06	NO
HMX	250 - 250	0 / 8	--	--	125	0.0	125	125	4.74	-- / --	52.7	26.4	26.4	26.4	NO[3]
Nitrobenzene	250 - 250	0 / 8	--	--	125	0.0	125	125	21.0	-- / --	11.9	5.95	5.95	5.95	NO[3]
Nitroglycerin	500 - 500	0 / 8	--	--	250	0.0	250	250	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Nitroguanidine	250 - 250	0 / 8	--	--	125	0.0	125	125	NSV	-- / --	NSV	NSV	NSV	NSV	NO
PETN	500 - 500	0 / 8	--	--	250	0.0	250	250	NSV	-- / --	NSV	NSV	NSV	NSV	NO

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3 - See Uncertainties

Table 8-15
Screening Statistics - Sites 8 and 34 - Sediment
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Normal Distribution)	Geometric Mean	Screening Value	Frequency of Exceedance	Maximum Hazard Quotient[1]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
RDX	250 - 250	0 / 8	--	--	125	0.0	125	125	12.7	-- / --	19.7	9.84	9.84	9.84	NO[3]
Tetryl	250 - 250	0 / 8	--	--	125	0.0	125	125	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Volatile Organic Compounds (UG/KG)															
1,1,1-Trichloroethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	856	-- / --	0.04	0.02	0.02	0.02	NO
1,1,2,2-Tetrachloroethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	202	-- / --	0.15	0.07	0.07	0.07	NO
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,1,2-Trichloroethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	570	-- / --	0.05	0.02	0.03	0.02	NO
1,1-Dichloroethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	27.0	-- / --	1.11	0.50	0.54	0.49	NO
1,1-Dichloroethene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	2,782	-- / --	0.011	0.005	0.005	0.005	NO
1,2,4-Trichlorobenzene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	473	-- / --	0.06	0.03	0.03	0.03	NO
1,2-Dibromo-3-chloropropane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dibromoethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dichlorobenzene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	989	-- / --	0.030	0.014	0.015	0.013	NO
1,2-Dichloroethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	250	-- / --	0.12	0.05	0.06	0.05	NO
1,2-Dichloropropane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,3-Dichlorobenzene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	842	-- / --	0.04	0.02	0.02	0.02	NO
1,4-Dichlorobenzene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	110	-- / --	0.27	0.12	0.13	0.12	NO
2-Butanone	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
2-Hexanone	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Methyl-2-pentanone	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Acetone	19.0 - 30.0	2 / 8	29.0	YS08-SD04-1207	16.3	6.06	20.3	15.4	NSV	-- / --	NSV	NSV	NSV	NSV	YES
Benzene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	137	-- / --	0.22	0.10	0.11	0.10	NO
Bromodichloromethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Bromoform	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	1,308	-- / --	0.023	0.010	0.011	0.010	NO
Bromomethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Carbon disulfide	19.0 - 30.0	2 / 8	15.0	YS08-SD04-1207	13.5	1.83	14.7	13.4	0.85	2 / 8	17.6	15.9	17.3	15.7	YES
Carbon tetrachloride	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	7,244	-- / --	0.004	0.002	0.002	0.002	NO
Chlorobenzene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	162	-- / --	0.19	0.08	0.09	0.08	NO
Chloroethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chloroform	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	22.0	-- / --	1.36	0.61	0.66	0.60	NO
Chloromethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Cyclohexane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dibromochloromethane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dichlorodifluoromethane (Freon-12)	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Ethylbenzene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	305	-- / --	0.10	0.04	0.05	0.04	NO
Isopropylbenzene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methyl acetate	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO

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Methyl-tert-butyl ether (MTBE)	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methylcyclohexane	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methylene chloride	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	370	-- / --	0.08	0.04	0.04	0.04	NO
Styrene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	7,069	-- / --	0.004	0.002	0.002	0.002	NO
Tetrachloroethene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	57.0	-- / --	0.53	0.23	0.25	0.23	NO
Toluene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	1,086	-- / --	0.028	0.012	0.013	0.012	NO
Trichloroethene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	41.0	-- / --	0.73	0.33	0.35	0.32	NO
Trichlorofluoromethane(Freon-11)	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Vinyl chloride	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Xylene, total	26.0 - 30.0	1 / 8	15.0	YSA14-SD02-1207	14.1	0.82	14.6	14.0	160	0 / 8	0.09	0.09	0.09	0.09	NO
cis-1,2-Dichloroethene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	400	-- / --	0.08	0.03	0.04	0.03	NO
cis-1,3-Dichloropropene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	7.31	-- / --	4.10	1.83	1.99	1.81	NO[3]
trans-1,2-Dichloroethene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	400	-- / --	0.08	0.03	0.04	0.03	NO
trans-1,3-Dichloropropene	19.0 - 30.0	0 / 8	--	--	13.4	1.73	14.5	13.3	7.31	-- / --	4.10	1.83	1.99	1.81	NO[3]
Other Parameters															
Total organic carbon (MG/KG)	-- - --	8 / 8	63,200	YSA14-SD01-1207	48,050	12,145	56,185	46,403	--	-- / --	--	--	--	--	--
pH	-- - --	8 / 8	7.40	YS08-SD04-1207	7.05	0.34	7.28	7.04	--	-- / --	--	--	--	--	--

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Table 8-16
Hazard Quotients for Food Web Exposures - Maximum - Aquatic Receptors
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Raccoon		Mink		Muskrat		Marsh wren		Belted kingfisher		Great blue heron		Mallard	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Inorganics														
Arsenic	0.29	0.06	0.07	0.01	5.93	1.19	1.18	0.39	0.12	0.05	0.02	<0.01	0.32	0.13
Cadmium	0.04	<0.01	<0.01	<0.01	0.10	<0.01	0.20	0.01	0.03	<0.01	<0.01	<0.01	0.08	<0.01
Chromium	0.10	0.02	0.03	<0.01	0.25	0.05	3.32	0.66	0.62	0.12	0.12	0.02	0.70	0.14
Copper	0.19	0.15	<0.01	<0.01	0.02	0.01	0.95	0.72	0.12	0.09	<0.01	<0.01	0.07	0.05
Lead	0.05	<0.01	0.01	<0.01	0.22	0.02	0.94	0.19	0.20	0.04	0.04	<0.01	1.61	0.16
Mercury	0.12	0.07	0.24	0.14	2.36	0.47	5.22	1.74	5.55	1.85	1.82	0.61	3.35	1.12
Nickel	0.02	<0.01	0.04	0.02	0.07	0.03	0.02	0.01	0.05	0.03	0.02	0.01	0.04	0.03
Selenium	2.20	1.33	1.90	1.15	11.4	6.89	6.04	3.02	0.92	0.18	0.28	0.06	6.35	3.17
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	0.56	0.11	0.04	<0.01	0.14	0.07	12.4	1.38	1.65	0.18	0.08	<0.01	2.17	0.24
Pesticides/PCBs														
4,4'-DDD	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4,4'-DDE	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.08	0.02	0.16	0.02	0.06	<0.01	<0.01	<0.01
4,4'-DDT	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.05	<0.01	0.02	<0.01	<0.01	<0.01
Aldrin	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-BHC	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-Chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor-1016	0.02	<0.01	0.05	0.02	0.04	<0.01	0.43	0.09	0.20	0.04	0.06	0.01	0.02	<0.01
Aroclor-1221	0.51	0.10	0.95	0.19	0.14	0.03	0.89	0.18	0.42	0.08	0.12	0.02	0.05	<0.01
Aroclor-1232	0.24	0.05	0.45	0.09	0.06	0.01	0.43	0.09	0.20	0.04	0.06	0.01	0.02	<0.01
Aroclor-1242	0.24	0.05	0.45	0.09	0.04	<0.01	0.43	0.09	0.20	0.04	0.06	0.01	0.02	<0.01
Aroclor-1248	0.24	0.05	0.44	0.09	0.03	<0.01	0.43	0.09	0.20	0.04	0.06	0.01	0.02	<0.01
Aroclor-1254	0.24	0.05	0.44	0.09	0.03	<0.01	0.43	0.09	0.20	0.04	0.06	0.01	0.02	<0.01
Aroclor-1260	0.24	0.05	0.44	0.09	0.03	<0.01	0.43	0.09	0.20	0.04	0.06	0.01	0.02	<0.01
beta-BHC	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
delta-BHC	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin	0.03	<0.01	0.02	<0.01	0.02	<0.01	0.17	0.03	0.04	<0.01	<0.01	<0.01	0.02	<0.01
Endosulfan I	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

NA - Screening Value Not Available
Shaded cells indicate HQ > 1

Table 8-16
Hazard Quotients for Food Web Exposures - Maximum - Aquatic Receptors
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Raccoon		Mink		Muskrat		Marsh wren		Belted kingfisher		Great blue heron		Mallard	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Endosulfan II	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endrin	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC (Lindane)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-Chlordane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor epoxide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Methoxychlor	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toxaphene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.16	0.03	0.11	0.02	0.03	<0.01	0.04	<0.01
Volatile and Semivolatile Organics														
1,1,2,2-Tetrachloroethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,3-Dichlorobenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,4-Dichlorobenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Bromophenyl-phenylether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.18	0.04	0.07	0.01	0.02	<0.01	0.05	<0.01
Acenaphthylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.18	0.04	0.07	0.01	0.02	<0.01	0.04	<0.01
Anthracene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.05	0.01	0.02	<0.01	0.03	<0.01
Benzo(a)anthracene	0.03	<0.01	0.05	0.01	0.06	0.01	0.12	0.02	0.07	0.01	0.02	<0.01	0.02	<0.01
Benzo(a)pyrene	0.01	<0.01	0.05	0.01	0.05	0.01	0.02	<0.01	0.05	0.01	0.02	<0.01	0.01	<0.01
Benzo(b)fluoranthene	0.01	<0.01	0.05	0.01	0.05	<0.01	0.02	<0.01	0.05	0.01	0.02	<0.01	0.01	<0.01
Benzo(g,h,i)perylene	0.01	<0.01	0.05	0.01	0.04	<0.01	0.03	<0.01	0.05	0.01	0.02	<0.01	0.01	<0.01
Benzo(k)fluoranthene	0.02	<0.01	0.05	0.01	0.05	<0.01	0.04	<0.01	0.06	0.01	0.02	<0.01	0.01	<0.01
Chrysene	0.02	<0.01	0.05	0.01	0.06	0.01	0.03	<0.01	0.06	0.01	0.02	<0.01	0.02	<0.01
Dibenz(a,h)anthracene	0.01	<0.01	0.05	0.01	0.04	<0.01	0.03	<0.01	0.05	0.01	0.02	<0.01	0.01	<0.01
Fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.06	0.01	0.02	<0.01	0.02	<0.01
Fluorene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.10	0.02	0.06	0.01	0.02	<0.01	0.04	<0.01
Hexachlorobenzene	0.04	<0.01	0.08	<0.01	0.11	0.06	4.93	0.99	3.61	0.72	1.13	0.23	1.15	0.23

NA - Screening Value Not Available
Shaded cells indicate HQ > 1

Table 8-16
Hazard Quotients for Food Web Exposures - Maximum - Aquatic Receptors
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Raccoon		Mink		Muskrat		Marsh wren		Belted kingfisher		Great blue heron		Mallard	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Hexachlorobutadiene	0.02	<0.01	0.02	<0.01	0.09	<0.01	0.12	0.02	0.05	0.01	0.02	<0.01	0.06	0.01
Hexachlorocyclopentadiene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.01	<0.01	0.05	0.01	0.04	<0.01	0.04	<0.01	0.06	0.01	0.02	<0.01	0.01	<0.01
Pentachlorophenol	0.06	0.01	0.11	0.02	0.17	0.03	0.79	0.40	0.54	0.27	0.17	0.08	0.23	0.11
Phenanthrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	0.01	0.06	0.01	0.02	<0.01	0.03	<0.01
Pyrene	0.03	<0.01	0.05	0.01	0.08	0.02	0.07	0.01	0.06	0.01	0.02	<0.01	0.03	<0.01

NA - Screening Value Not Available
Shaded cells indicate HQ > 1

Table 8-17
Hazard Quotients for Food Web Exposures - Arithmetic Mean - Aquatic Receptors
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Raccoon		Mink		Muskrat		Marsh wren			Belted kingfisher			Great blue heron		Mallard	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	MATC	LOAEL	NOAEL	MATC	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Inorganics																
Arsenic	0.05	<0.01	0.04	<0.01	0.28	0.06	0.48	0.27	0.16	0.05	0.03	0.02	0.01	<0.01	0.01	<0.01
Chromium	0.03	<0.01	0.01	<0.01	0.08	0.02	1.07	0.48	0.21	0.21	0.09	0.04	0.08	0.02	0.15	0.03
Lead	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.19	0.08	0.04	0.06	0.03	0.01	0.03	<0.01	0.08	<0.01
Mercury	<0.01	<0.01	0.06	0.04	0.06	0.01	0.79	0.46	0.26	1.18	0.68	0.39	0.61	0.20	0.07	0.02
Selenium	0.12	0.07	0.28	0.17	0.25	0.15	0.89	0.63	0.45	0.11	0.05	0.02	0.05	0.01	0.12	0.06
Zinc	0.05	0.01	0.02	<0.01	0.01	<0.01	1.32	0.44	0.15	0.21	0.07	0.02	0.05	<0.01	0.13	0.01
Volatile and Semivolatile Organics																
Hexachlorobenzene	<0.01	<0.01	0.02	<0.01	0.02	0.01	0.98	0.44	0.20	0.86	0.39	0.17	0.43	0.09	0.19	0.04

Shaded cells indicate HQ > 1

Table 8-18
Hazard Quotients for Food Web Exposures - 95 Percent UCL of the Arithmetic Mean - Aquatic Receptors
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Raccoon		Mink		Muskrat		Marsh wren			Belted kingfisher			Great blue heron		Mallard	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	MATC	LOAEL	NOAEL	MATC	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Inorganics																
Arsenic	0.06	0.01	0.04	<0.01	0.31	0.06	0.54	0.31	0.18	0.05	0.03	0.02	0.02	<0.01	0.01	<0.01
Chromium	0.04	<0.01	0.02	<0.01	0.09	0.02	1.25	0.56	0.25	0.24	0.11	0.05	0.09	0.02	0.17	0.03
Lead	0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.23	0.10	0.05	0.07	0.03	0.01	0.03	<0.01	0.10	<0.01
Mercury	0.01	<0.01	0.09	0.05	0.08	0.02	1.09	0.63	0.36	1.63	0.94	0.54	0.84	0.28	0.10	0.03
Selenium	0.20	0.12	0.48	0.29	0.43	0.26	1.54	1.09	0.77	0.19	0.08	0.04	0.09	0.02	0.21	0.10
Zinc	0.06	0.01	0.03	<0.01	0.02	<0.01	1.64	0.55	0.18	0.26	0.09	0.03	0.06	<0.01	0.16	0.02
Volatile and Semivolatile Organics																
Hexachlorobenzene	<0.01	<0.01	0.03	<0.01	0.03	0.01	1.06	0.48	0.21	0.94	0.42	0.19	0.47	0.09	0.21	0.04

Shaded cells indicate HQ > 1

Table 8-19
Comparison of Site Surface Water COPC Concentrations to Background Concentrations
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Site Samples			Background Samples			Ratio of Maximums	Ratio of Means
	Frequency of Detection	Maximum	Arithmetic Mean	Frequency of Detection	Maximum	Arithmetic Mean		
Dissolved Metals (UG/L)								
Aluminum	5 / 8	317	153	3 / 6	327	174	0.97	0.88
Barium	8 / 8	35.3	33.0	6 / 6	35.9	32.3	0.98	1.02
Copper	1 / 8	3.20	11.3	0 / 6	--	12.5	--	0.91

Table 8-20
Comparison of Site Sediment COPC Concentrations to Background Concentrations
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Site Samples			Background Samples			Ratio of Maximums	Ratio of Means
	Frequency of Detection	Maximum	Arithmetic Mean	Frequency of Detection	Maximum	Arithmetic Mean		
Metals (MG/KG)								
Aluminum	8 / 8	26,500	18,424	6 / 6	20,900	17,833	1.27	1.03
Arsenic	8 / 8	13.4	10.7	6 / 6	14.8	12.9	0.91	0.83
Beryllium	8 / 8	1.10	0.83	6 / 6	1.10	0.89	1.00	0.93
Manganese	8 / 8	412	271	6 / 6	496	335	0.83	0.81
Silver	6 / 8	1.20	0.74	6 / 6	10.9	2.54	0.11	0.29
Volatile Organic Compounds (UG/KG)								
Acetone	2 / 8	29.0	16.3	1 / 6	39.0	17.7	0.74	0.92
Carbon disulfide	2 / 8	15.0	13.5	1 / 6	13.0	13.3	1.15	1.01

Table 8-21
Reporting Limit to Screening Value Comparison
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Units	Frequency of Detection	Minimum Reporting Limit	Maximum Reporting Limit	Mean Concentration	Screening Value	Minimum Ratio	Maximum Ratio	Mean Ratio
Sediment									
Antimony	MG/KG	0 / 8	1.50	13.4	4.48	2.00	0.75	6.70	2.24
Selenium	MG/KG	0 / 8	0.57	7.9	1.62	1.00	0.57	7.90	1.62
4,4'-DDD	UG/KG	0 / 8	6.30	10.0	4.52	2.00	3.15	5.00	2.26
4,4'-DDE	UG/KG	0 / 8	6.30	10.0	4.52	2.20	2.86	4.55	2.05
4,4'-DDT	UG/KG	0 / 8	6.30	10.0	4.52	1.00	6.30	10.0	4.52
Aroclor-1016	UG/KG	0 / 8	63.0	100	45.2	40.0	1.58	2.50	1.13
Aroclor-1221	UG/KG	0 / 8	130	210	93.1	40.0	3.25	5.25	2.33
Aroclor-1232	UG/KG	0 / 8	63.0	100	45.2	40.0	1.58	2.50	1.13
Aroclor-1242	UG/KG	0 / 8	63.0	100	45.2	40.0	1.58	2.50	1.13
Aroclor-1248	UG/KG	0 / 8	63.0	100	45.2	40.0	1.58	2.50	1.13
Aroclor-1254	UG/KG	0 / 8	63.0	100	45.2	40.0	1.58	2.50	1.13
Aroclor-1260	UG/KG	0 / 8	63.0	100	45.2	40.0	1.58	2.50	1.13
Dieldrin	UG/KG	0 / 8	6.30	10.0	4.52	0.72	8.75	13.9	6.28
Endrin	UG/KG	0 / 8	6.30	10.0	4.52	2.67	2.36	3.75	1.69
Endrin aldehyde	UG/KG	0 / 8	6.30	10.0	4.52	2.67	2.36	3.75	1.69
Endrin ketone	UG/KG	0 / 8	6.30	10.0	4.52	2.67	2.36	3.75	1.69
Heptachlor	UG/KG	0 / 8	3.30	5.30	2.34	0.30	11.0	17.7	7.81
Heptachlor epoxide	UG/KG	0 / 8	3.30	5.30	2.34	0.60	5.50	8.83	3.91
alpha-Chlordane	UG/KG	0 / 8	3.30	5.30	2.34	2.26	1.46	2.35	1.04
gamma-BHC (Lindane)	UG/KG	0 / 8	3.30	5.30	2.34	0.32	10.3	16.6	7.32
gamma-Chlordane	UG/KG	0 / 8	3.30	5.30	2.34	2.26	1.46	2.35	1.04
2,4,5-Trichlorophenol	UG/KG	0 / 8	1,300	2,100	919	819	1.59	2.56	1.12
2,4-Dichlorophenol	UG/KG	0 / 8	1,300	2,100	919	117	11.1	17.9	7.85
2,4-Dimethylphenol	UG/KG	0 / 8	1,300	2,100	919	29.0	44.8	72.4	31.7
2,4-Dinitrotoluene	UG/KG	0 / 8	1,300	2,100	919	41.6	31.2	50.4	22.1
2-Chlorophenol	UG/KG	0 / 8	1,300	2,100	919	344	3.78	6.10	2.67

Shaded cells indicate ratio > 1

Table 8-21
Reporting Limit to Screening Value Comparison
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Units	Frequency of Detection	Minimum Reporting Limit	Maximum Reporting Limit	Mean Concentration	Screening Value	Minimum Ratio	Maximum Ratio	Mean Ratio
2-Methylnaphthalene	UG/KG	0 / 8	1,300	2,100	919	20.2	64.4	104	45.5
2-Methylphenol	UG/KG	0 / 8	1,300	2,100	919	63.0	20.6	33.3	14.6
4-Methylphenol	UG/KG	0 / 8	1,300	2,100	919	670	1.94	3.13	1.37
Acenaphthene	UG/KG	0 / 8	1,300	2,100	919	16.0	81.3	131	57.4
Acenaphthylene	UG/KG	0 / 8	1,300	2,100	919	44.0	29.5	47.7	20.9
Anthracene	UG/KG	0 / 8	1,300	2,100	919	85.3	15.2	24.6	10.8
Atrazine	UG/KG	0 / 8	1,300	2,100	919	6.62	196	317	139
Benzo(a)anthracene	UG/KG	0 / 8	1,300	2,100	919	261	4.98	8.05	3.52
Benzo(a)pyrene	UG/KG	0 / 8	1,300	2,100	919	430	3.02	4.88	2.14
Benzo(g,h,i)perylene	UG/KG	0 / 8	1,300	2,100	919	670	1.94	3.13	1.37
Butylbenzylphthalate	UG/KG	0 / 8	1,300	2,100	919	63.0	20.6	33.3	14.6
Chrysene	UG/KG	0 / 8	1,300	2,100	919	384	3.39	5.47	2.39
Dibenz(a,h)anthracene	UG/KG	0 / 8	1,300	2,100	919	63.4	20.5	33.1	14.5
Diethylphthalate	UG/KG	0 / 8	1,300	2,100	919	218	5.96	9.63	4.21
Fluoranthene	UG/KG	0 / 8	1,300	2,100	919	600	2.17	3.50	1.53
Fluorene	UG/KG	0 / 8	1,300	2,100	919	19.0	68.4	111	48.4
Hexachlorobenzene	UG/KG	0 / 8	1,300	2,100	919	20.0	65.0	105	45.9
Hexachloroethane	UG/KG	0 / 8	1,300	2,100	919	73.0	17.8	28.8	12.6
Indeno(1,2,3-cd)pyrene	UG/KG	0 / 8	1,300	2,100	919	600	2.17	3.50	1.53
Naphthalene	UG/KG	0 / 8	1,300	2,100	919	160	8.13	13.1	5.74
Nitrobenzene	UG/KG	0 / 8	1,300	2,100	919	21.0	61.9	100	43.8
Pentachlorophenol	UG/KG	0 / 8	6,500	11,000	4,694	360	18.1	30.6	13.0
Phenanthrene	UG/KG	0 / 8	1,300	2,100	919	240	5.42	8.75	3.83
Phenol	UG/KG	0 / 8	1,300	2,100	919	420	3.10	5.00	2.19
Pyrene	UG/KG	0 / 8	1,300	2,100	919	665	1.95	3.16	1.38
bis(2-Ethylhexyl)phthalate	UG/KG	0 / 8	1,300	2,100	919	182	7.14	11.5	5.05
n-Nitrosodiphenylamine	UG/KG	0 / 8	1,300	2,100	919	28.0	46.4	75.0	32.8

Shaded cells indicate ratio > 1

Table 8-21
Reporting Limit to Screening Value Comparison
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Units	Frequency of Detection	Minimum Reporting Limit	Maximum Reporting Limit	Mean Concentration	Screening Value	Minimum Ratio	Maximum Ratio	Mean Ratio
1,3,5-Trinitrobenzene	UG/KG	0 / 8	250	250	125	2.40	104	104	52.1
1,3-Dinitrobenzene	UG/KG	0 / 8	250	250	125	6.70	37.3	37.3	18.7
2,4,6-Trinitrotoluene	UG/KG	0 / 8	250	250	125	92.0	2.72	2.72	1.36
2,4-Dinitrotoluene	UG/KG	0 / 8	250	250	125	41.6	6.00	6.00	3.00
HMX	UG/KG	0 / 8	250	250	125	4.74	52.7	52.7	26.4
Nitrobenzene	UG/KG	0 / 8	250	250	125	21.0	11.9	11.9	5.95
RDX	UG/KG	0 / 8	250	250	125	12.7	19.7	19.7	9.84
cis-1,3-Dichloropropene	UG/KG	0 / 8	19.0	30.0	13.4	7.31	2.60	4.10	1.83
trans-1,3-Dichloropropene	UG/KG	0 / 8	19.0	30.0	13.4	7.31	2.60	4.10	1.83
Surface Water									
Beryllium (dissolved)	UG/L	0 / 8	5.00	5.00	2.50	0.66	7.58	7.58	3.79
Cobalt	UG/L	0 / 8	50.0	50.0	25.0	23.0	2.17	2.17	1.09
Cobalt (dissolved)	UG/L	0 / 8	50.0	50.0	25.0	23.0	2.17	2.17	1.09
Copper	UG/L	0 / 8	25.0	25.0	12.5	3.70	6.76	6.76	3.38
Cyanide	UG/L	0 / 8	10.0	10.0	5.00	1.00	10.0	10.0	5.00
Lead	UG/L	0 / 8	10.0	50.0	20.0	8.50	1.18	5.88	2.35
Lead (dissolved)	UG/L	0 / 8	10.0	50.0	20.0	8.10	1.23	6.17	2.47
Silver (dissolved)	UG/L	0 / 8	10.0	10.0	5.00	0.23	43.5	43.5	21.7
Thallium	UG/L	0 / 8	6.60	125	47.8	21.3	0.31	5.87	2.24
Thallium (dissolved)	UG/L	0 / 8	4.90	125	47.6	21.3	0.23	5.87	2.23
Vanadium	UG/L	0 / 8	50.0	50.0	25.0	20.0	2.50	2.50	1.25
Vanadium (dissolved)	UG/L	0 / 8	50.0	50.0	25.0	20.0	2.50	2.50	1.25
4,4'-DDD	UG/L	0 / 8	0.094	0.10	0.048	0.025	3.76	3.96	1.92
4,4'-DDT	UG/L	0 / 8	0.094	0.10	0.048	0.0065	14.5	15.2	7.38
Aroclor-1016	UG/L	0 / 8	0.94	0.99	0.48	0.030	31.3	33.0	16.0
Aroclor-1221	UG/L	0 / 8	1.90	2.00	0.97	0.030	63.3	66.7	32.3
Aroclor-1232	UG/L	0 / 8	0.94	0.99	0.48	0.030	31.3	33.0	16.0

Shaded cells indicate ratio > 1

Table 8-21
Reporting Limit to Screening Value Comparison
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

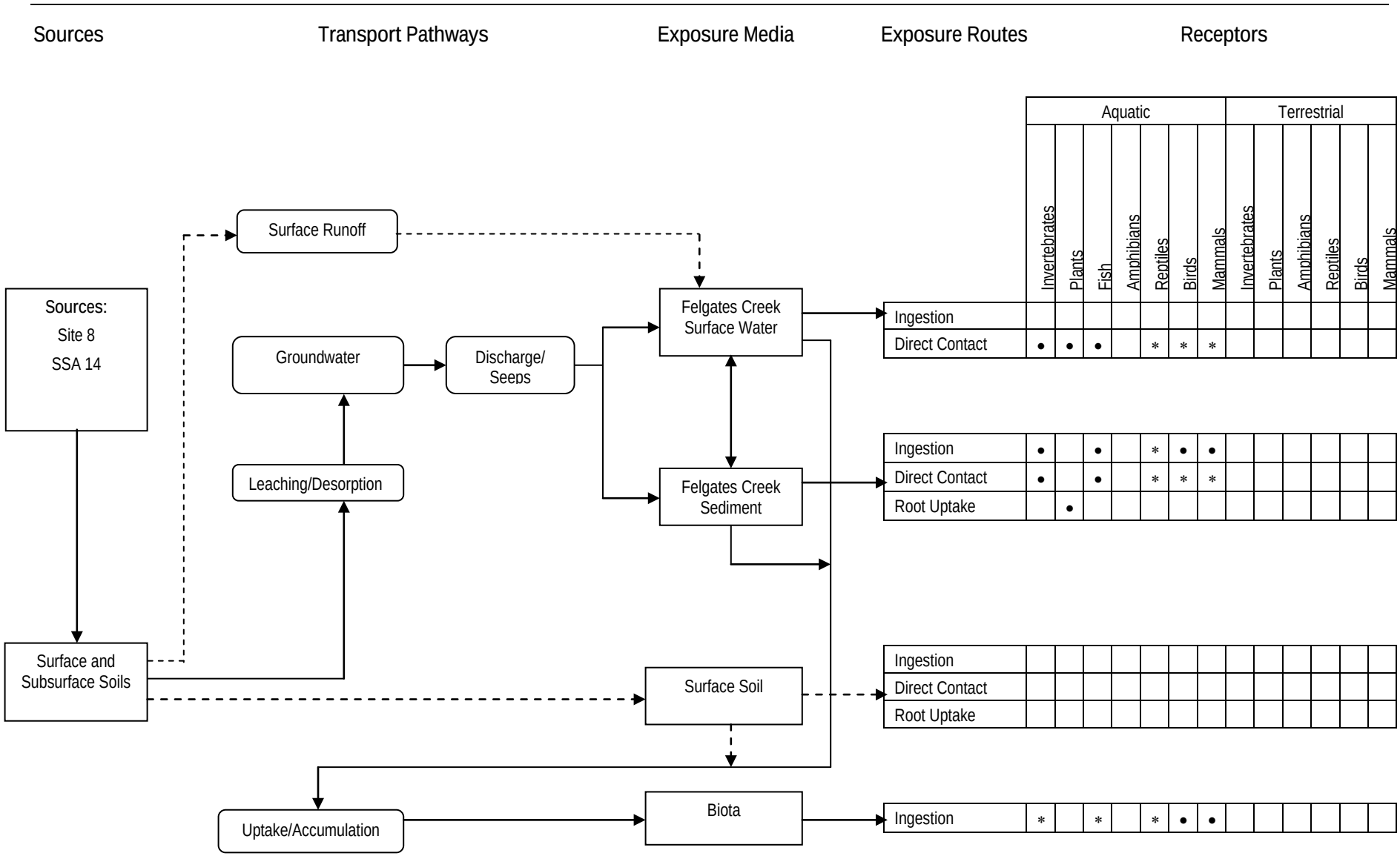
Chemical	Units	Frequency of Detection	Minimum Reporting Limit	Maximum Reporting Limit	Mean Concentration	Screening Value	Minimum Ratio	Maximum Ratio	Mean Ratio
Aroclor-1242	UG/L	0 / 8	0.94	0.99	0.48	0.030	31.3	33.0	16.0
Aroclor-1248	UG/L	0 / 8	0.94	0.99	0.48	0.030	31.3	33.0	16.0
Aroclor-1254	UG/L	0 / 8	0.94	0.99	0.48	0.030	31.3	33.0	16.0
Aroclor-1260	UG/L	0 / 8	0.94	0.99	0.48	0.030	31.3	33.0	16.0
Endosulfan I	UG/L	0 / 8	0.047	0.05	0.024	0.0087	5.40	5.75	2.77
Endosulfan II	UG/L	0 / 8	0.094	0.10	0.048	0.0087	10.8	11.4	5.51
Endosulfan sulfate	UG/L	0 / 8	0.094	0.10	0.048	0.0087	10.8	11.4	5.51
Endrin	UG/L	0 / 8	0.094	0.10	0.048	0.010	9.40	9.9	4.79
Endrin aldehyde	UG/L	0 / 8	0.094	0.10	0.048	0.010	9.40	9.9	4.79
Endrin ketone	UG/L	0 / 8	0.094	0.10	0.048	0.010	9.40	9.9	4.79
Heptachlor	UG/L	0 / 8	0.047	0.05	0.024	0.0036	13.1	13.9	6.68
Heptachlor epoxide	UG/L	0 / 8	0.047	0.05	0.024	0.0036	13.1	13.9	6.68
Methoxychlor	UG/L	0 / 8	0.47	0.50	0.24	0.030	15.7	16.7	8.02
Toxaphene	UG/L	0 / 8	4.70	5.00	2.41	0.21	22.4	23.8	11.5
alpha-Chlordane	UG/L	0 / 8	0.047	0.05	0.024	0.004	11.8	12.5	6.02
gamma-BHC (Lindane)	UG/L	0 / 8	0.047	0.05	0.024	0.016	2.94	3.13	1.50
gamma-Chlordane	UG/L	0 / 8	0.047	0.05	0.024	0.004	11.8	12.5	6.02
4,6-Dinitro-2-methylphenol	UG/L	0 / 7	47.0	49.0	24.4	2.30	20.4	21.3	10.6
4-Bromophenyl-phenylether	UG/L	0 / 7	9.40	9.80	4.84	1.50	6.27	6.53	3.22
4-Chloro-3-methylphenol	UG/L	0 / 7	9.40	9.80	4.84	0.30	31.3	32.7	16.1
Anthracene	UG/L	0 / 7	9.40	9.80	4.84	0.18	52.2	54.4	26.9
Atrazine	UG/L	0 / 7	9.40	9.80	4.84	1.80	5.22	5.44	2.69
Benzo(a)anthracene	UG/L	0 / 7	9.40	9.80	4.84	0.027	348	363	179
Benzo(a)pyrene	UG/L	0 / 7	9.40	9.80	4.84	0.014	671	700	345
Di-n-butylphthalate	UG/L	0 / 7	9.40	9.80	4.84	3.40	2.76	2.88	1.42
Fluorene	UG/L	0 / 7	9.40	9.80	4.84	2.50	3.76	3.92	1.93
Hexachlorobenzene	UG/L	0 / 7	9.40	9.80	4.84	3.68	2.55	2.66	1.31

Shaded cells indicate ratio > 1

Table 8-21
Reporting Limit to Screening Value Comparison
Remedial Investigation Report for Groundwater at Sites 8 and 34
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Units	Frequency of Detection	Minimum Reporting Limit	Maximum Reporting Limit	Mean Concentration	Screening Value	Minimum Ratio	Maximum Ratio	Mean Ratio
Hexachlorobutadiene	UG/L	0 / 7	9.40	9.80	4.84	0.32	29.4	30.6	15.1
Hexachlorocyclopentadiene	UG/L	0 / 7	9.40	9.80	4.84	0.070	134	140	69.1
Pentachlorophenol	UG/L	0 / 7	47.0	49.0	24.4	7.90	5.95	6.20	3.08
Pyrene	UG/L	0 / 7	9.40	9.80	4.84	0.24	39.2	40.8	20.1
1,2,4-Trichlorobenzene	UG/L	0 / 8	10.0	10.0	5.00	4.50	2.22	2.22	1.11
Carbon disulfide	UG/L	0 / 8	10.0	10.0	5.00	0.92	10.9	10.9	5.43

Shaded cells indicate ratio > 1



Complete and potentially significant pathway

Incomplete or historical pathway

FIGURE 8-1
ECOLOGICAL CONCEPTUAL MODEL – SITE 8 and SSA 14
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

• - Receptor evaluated quantitatively
* - Receptor not evaluated quantitatively

SECTION 9

Conceptual Site Models and Fate and Transport Mechanisms

This section presents the CSM for Sites 8 and 34 and fate and transport mechanisms for contaminants posing risk at the sites. A graphical representation of the CSM for the two sites is presented as **Figure 9-1**. Key components of the CSM are discussed below.

9.1 COCs and Contaminated Media

This CSM focuses on COCs and MCL exceedances identified at each site. Although site-related chemicals were identified at the sites at concentrations which did not pose risk, those chemicals are not discussed in this section because their presence at the sites will not require further action. There were no COCs identified on the basis of ecological concerns at the sites. There were no COCs identified for surface water or sediment at either site. The following COCs and MCL exceedances were identified for groundwater based on human health concerns:

- **Site 8—**PCE, vinyl chloride, bis(2-ethylhexyl)phthalate, 2,4,6-TNT, RDX, 3,5-dinitroaniline, 4-Amino-2,6-DNT and 2-Amino-4,6-DNT
- **Site 34—**PCE, TCE, 1,1-DCE, cis-1,2-DCE, 1,1-DCA, and arsenic (RME resident exposure only)

Although some chemicals are discharging to surface water bodies, there are no risks associated with these chemicals in surface water bodies. The groundwater seep survey did not find any flowing seeps during the site visit at either Site 8 or Site 34 so it is not possible to directly evaluate risks from seep exposure point concentrations. Though the migration pathways between groundwater and surface water is complete, concentrations in seeps would not be expected to be either greater than those detected in groundwater or to increase over time since excavations have already been completed at both sites to address soil contamination and sediment contamination from soil runoff. Therefore, no action is necessary to address surface water or seeps in the vicinity of these sites.

9.2 Source of Contamination

The original source of contamination at Site 8 was the discharge area where explosives-contaminated rinse water was previously discharged. These discharges were discontinued and contaminated soils and sediment at the site have been removed and disposed offsite as part of a soil and sediment remedy. Therefore, the remaining concentrations of explosives and volatiles in groundwater at Site 8 are likely to be residual.

With the exception of arsenic, all of the COCs and MCL exceedances identified for Site 34 consist of chlorinated VOCs. The known source at Site 34 was an explosives discharge pipe. There was no historical release of chlorinated VOCs at the site, and the distribution of the

VOCs indicates the likely source was slightly upgradient of the discharge pipe. Therefore, the exact source of the release is unknown. MIP data collected at the surface did not identify a source of contamination in the unsaturated soil.

9.3 Migration

Based on the extent of contamination identified during the RI, the primary migration pathway remaining at the sites is through advective (with groundwater flow) transport to surface water bodies. The surficial aquifer across these sites is the Yorktown Eastover aquifer which is composed of varying amount of sand and silt with clay lenses. Assuming an effective porosity of 0.25 and average hydraulic conductivity of 4.3 ft/day (**Tables 5-4 and 4-4**), groundwater flow rate can be calculated using the following equation:

$$V = K\left(\frac{i}{n}\right)$$

V = groundwater flow velocity

K = hydraulic conductivity

i = gradient

n = porosity

Based on the average gradient at the sites (approximately 0.048 ft/ft), velocity at the site is approximately 0.0826 ft/day or 30 ft/year. However, contaminants are not expected to migrate as rapidly as groundwater because of sorption to soil particles (retardation). There were no seeps identified at Site 8 or Site 34, and therefore, no seep samples collected, but contaminants (TCE, 1,1-DCE, cis-1,2-DCE, 1,1,1-TCA, 2-amino-4,6-DNT, octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX), RDX, and nitrobenzene) were detected in surface water adjacent to the site at low concentrations, indicating a complete transport pathway from groundwater at the site to surface water. However, because no continuing sources are present at the sites and the volume of chemicals discharging to surface water is not likely to increase, contaminants in surface water bodies are not likely to ever pose unacceptable risk and contaminant transport via advection is not a concern.

Contaminants may also be migrating in groundwater through dispersion which may slowly increase the size of the contaminant plume in groundwater. Volatilization of some contaminants (particularly VOCs at both sites) from the groundwater into the air is also a possible migration pathway at the sites.

9.4 Exposure

The only complete exposure pathway for current receptors is industrial workers and ecological receptor exposure to surface water and sediment. There were no unacceptable human health risks associated with these pathways. There are no current exposure pathways to groundwater at the site because groundwater is not currently used as a potable or other water source. Under a future land use scenario, groundwater could be used as a potable water source, although this is unlikely. Vapors from ground water could also impact buildings onsite, however no unacceptable risks were identified for this pathway at the sites. There are complete exposure pathways at the site for ecological receptors, but concentrations of contaminants do not pose unacceptable risks to ecological receptors.

9.5 Sources, Fate, and Transport of COCs

Potential sources and fate and transport mechanisms for each of the chemicals identified as COCs for the sites are discussed below.

9.5.1 Arsenic

Arsenic was identified as a COC at Site 34 based on residential groundwater exposure under the RME scenario. The only detected dissolved concentration of arsenic in groundwater was 4.9 J µg/L (YSA14-GW02). Arsenic was not detected in the three background wells samples in the Yorktown Eastover aquifer as documented in *Background Constituent Concentrations and Characterization of Biotic Community from the York River Drainage Basin* (Baker, 1995). However, the exiting three background wells are installed in the Lackey Plain portion of WPNSTA where the Yorktown aquifer lies beneath the Columbia aquifer, Cornwallis Cave confining unit an aquifer, and Yorktown confining unit. The conditions represented by those background wells are not likely to adequately represent conditions on Croaker Flat, where the Yorktown aquifer is unconfined. Naturally occurring arsenic is typically found as part of ferric iron oxyhydroxide minerals in systems with high redox potentials, but can be released to groundwater in systems with lower redox potential. Field results for YSA14-GW02 indicated reducing conditions. The ORP value for this well was -43 mV and the DO concentration was 0.23 µg/L. Additionally, dissolved arsenic was not detected in the vicinity of the discharge pipe or VOC plume, indicating that the arsenic present in the sample from YSA14-GW02 is not likely to be site-related. Arsenic in this sample is likely the result of geochemical conditions.

9.5.2 Chlorinated Ethenes

Chlorinated ethenes were identified as a COCs or MCL exceedances in Sites 8 and 34 groundwater. At Site 8, these chemicals are likely to be site-related due to discharges from Building 456. At Site 34, these chemicals appear to be from a source upgradient of the site near Building 458. Chlorinated VOC contamination at the sites is in dissolved phase (no indications of free-phase contamination). At both sites, contamination appears to be present at the shallower depth intervals (between 10 and 40 ft bgs). A distinct clay layer was identified at approximately 40 ft bgs during the MIP study at Site 34, and may be preventing downward migration of contaminants. Chlorinated solvent concentrations can change over time due to dilution and dispersion, but the primary mechanism for reductions in concentrations under naturally occurring conditions is degradation. Biodegradation of chlorinated ethenes is a well-understood process whereby these VOCs undergo biodegradation through one of three different pathways: use as an electron acceptor by dehalorespiring organisms (reductive dechlorination), direct intracellular oxidation by oxygen-dependant microbes that can use the contaminant as an energy source (most effective for vinyl chloride), or co-metabolism (a fortuitous destruction of contaminants by organisms intending to metabolize other organic compounds). Co-metabolism provides no direct benefit to the biodegrading organism.

Biodegradation via reductive dechlorination is often the principal attenuation mechanism for PCE and other chlorinated ethenes in groundwater. Biological reductive dechlorination is a microbially-mediated process in which chlorinated VOCs serve as the electron acceptors (e.g., fuel hydrocarbons) and natural organic carbon sources can serve as electron donors.

Reductive dechlorination results in the sequential replacement of a chlorine atom on the chlorinated VOC molecule with hydrogen (see reaction pathway below), and can ultimately lead to complete dechlorination to innocuous end-products, such as chloride and ethene.

PCE⟶TCE ⟶ cis-1,2-DCE (or trans-1,2-DCE or 1,1-DCE) ⟶ VC ⟶ ethene

The reductive dechorination process is facilitated by a number of species of microbes. However, *Dehalococcoides* sp. (DHC) is the only microbe known to be capable of degrading chlorinated ethenes completely to ethene.

The rate of reductive dechlorination tends to decrease as the degree of chlorination decreases. Thus, PCE tends to degrade more rapidly than TCE, cis-1,2-DCE, and VC, which can result in accumulation of daughter products, at least temporarily. However, whereas biodegradation of PCE and TCE is largely limited to occurring via reductive dechlorination under deeply anaerobic conditions, the less chlorinated produce, particularly vinyl chloride, have been found to biodegrade by either anaerobic reductive dechlorination or aerobic direct oxidation. The importance of this is that biodegradation of daughter products is possible if they migrate to an area of aerobic conditions, such as sometimes occurs at the edge of a plume or after the electron donor supply has been exhausted.

Degradation of chlorinated ethenes is an important mechanism of degradation at Site 8 and Site 34, as evidenced by the presence of PCE daughter products and parent product and DHC at the sites.

9.5.3 RDX

RDX was identified as a COC in groundwater at Site 8 under the RME scenario. The source of RDX is likely site related. Although research on RDX is limited, and RDX is known to be persistent in the environment, available literature indicated that RDX may degrade slowly under reducing conditions through intermediate degradation products, heahydro-1-nitroso-3,4-dinitro-1,3,5-triazine (MNX), hexahydro-1,3-dinitroso-5-nitro-1,3,5-triazine (DNX), hexahydro-1,3,5-trinitro-1,3,5-trinitroso-1,3,5-triazine (TNX). This type of degradation may be occurring at Site 8 in areas of the site that are under reducing conditions, but analyses for degradation products have not been performed. RDX is not volatile and not very mobile, so degradation is believed to be the primary fate and transport mechanism for this chemical.

9.5.4 3,5-Dinitroaniline

3,5-dinitroaniline was identified as a COC in groundwater at Site 8 under the RME scenario. There is strong indication that the source of 3,5-dinitroaniline is degradation of 1,3,5-trinitrobenzene. It is well documented that 3,5-dinitroaniline is a daughter product of 1,3,5-trinitrobenzene and concentrations of 3,5-dinitroaniline were only detected at the same two wells where 1,3,5-trinitrobenzene was detected at Site 8 (HSDB, 2000). Dinitroaniline is not volatile, mobile, or readily biodegradable in the environment, but has been shown to degrade more readily under anaerobic conditions.

9.5.5 2,4,6-TNT, 4-Amino-2,6-DNT, and 2-Amino-4,6-DNT

2,4,6-TNT and its degradation products, 4-amino-2,6-DNT and 2-amino-4,6-DNT, were identified as a COCs in groundwater at Site 8 under the RME scenario. TNT degrades to its amino-DNT daughter products under both aerobic and anaerobic conditions in the presence

of various microbes (French, Nicklin, and Bruce, 1998). Under the aerobic pathway, the amino-DNTs degrade to 4-acetamido-2-amino-6-nitrotoluene. Under the anaerobic pathway, the amino-TNTs degrade to toluene. TNT and the amino-DNTs are site-related chemicals associated with work done at Site 8. TNT and is not volatile and not very mobile, so biodegradation is likely the primary fate and transport mechanism for this chemical. The amino-DNTs are moderately mobile in the environment and could be subject to either advective transport or biodegradation as a fate and transport mechanism.

9.5.6 1,1-DCA

1,1-DCA was detected in Site 34 groundwater at concentrations greater than the corresponding MCL. Other chlorinated alkanes have been demonstrated to degrade to gycolate. A modified version of this process may exist for 1,1-DCA, but the exact pathway for this degradation has not yet been determined. Consequently, it is not certain whether this contaminant could biodegrade at the site.

9.5.7 Bis(2-ethylhexyl)phthalate

Phthalates have been shown to be resistant to bacterial degradation in nature. However, this constituent was detected in only the 2007 round of monitoring in one monitoring well and is likely related to laboratory contamination. This chemical was not detected during any previous investigations in the same well.

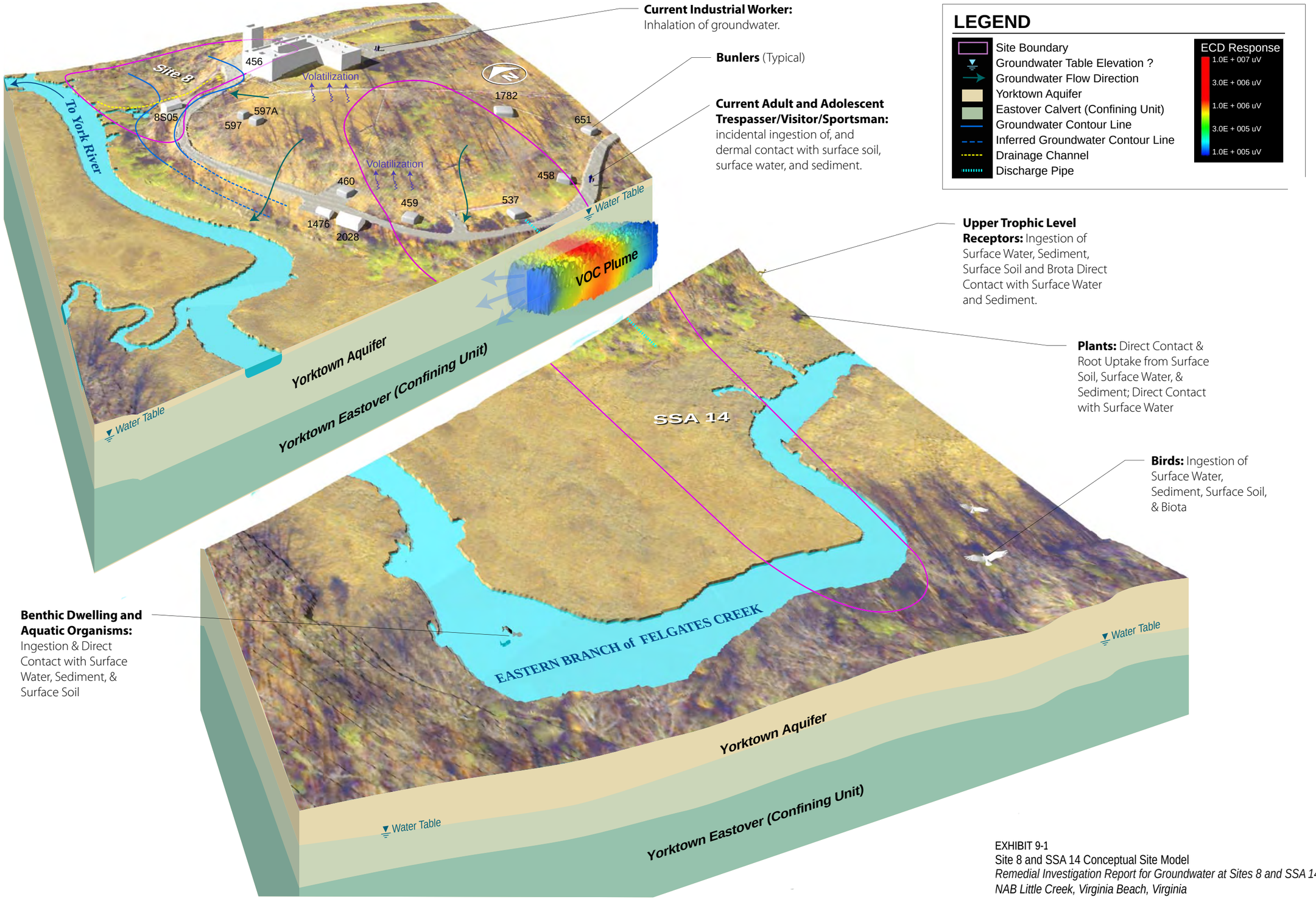


EXHIBIT 9-1
Site 8 and SSA 14 Conceptual Site Model
Remedial Investigation Report for Groundwater at Sites 8 and SSA 14
NAB Little Creek, Virginia Beach, Virginia

SECTION 10

Conclusions and Recommendations

10.1 Site 8

PCE, vinyl chloride, bis(2-ethylhexyl)phthalate, 2,4,6-TNT, RDX, 3,5-dinitroaniline, 4-amino-2,6-DNT and 2-amino-4,6-DNT were identified as human health COCs or MCL exceedances for groundwater at Site 8. 2,4,6-TNT, 4-amino-2,6-DNT, and 2-amino-4,6-DNT were each detected in three of the wells sampled while 3,5-dinitroaniline was detected in two. 4-amino-2,6-DNT exceeded the associated RSL of 73 µg/L in only one sample (YS08-GW08). There are no MCLs for any of the three chemicals. There were no unacceptable risks associated with these chemicals under the CTE scenario and the original source of contamination has been removed. Therefore, no additional action is recommended to address these chemicals in groundwater at Site 8. RDX was detected in four of the ten wells samples with three exceeding the RSL of 0.61 µg/L. There were no unacceptable risks associated with this chemical under the CTE scenario, however, there were unacceptable risks under the RME scenario. Additional action may be considered to address this chemical. Additionally, concentrations of PCE and vinyl chloride in groundwater exceeded MCLs. Additional action is necessary to address these chemicals and consequently, an FS is warranted for this site.

10.2 Site 34

PCE, TCE, 1,1-DCE, cis-1,2-DCE, 1,1-DCA, and arsenic were either identified as human health COCs for groundwater at Site 34 or exceeded MCLs. Concentrations of arsenic did not pose risk under the CTE exposure scenario, and none of the concentrations in the dissolved samples exceeded the MCL. Concentrations of arsenic may be related to geochemical conditions or offsite sources, rather than a site source, therefore, no additional action is necessary to address arsenic at the site. TCE was detected in five of the seven well samples with four of the detections exceeding the MCL (5 µg/L). TCE poses unacceptable risk to the lifetime receptor based on RME conditions, but not CTE conditions. However, because TCE concentrations exceed the MCL, additional action is necessary to address them. Additional action is also necessary to address 1,1-DCE, cis-1,2-DCE, PCE, and 1,1-DCA because these chemicals also exceed MCLs. An FS is necessary to address these compounds.

10.3 Surface Water and Sediment

No unacceptable human health or ecological risks were identified for surface water and sediment in the Eastern Branch of Felgates Creek. Because sources of contamination related to the waste and soil have been removed at the site, additional chemical contributions to the creek will be minimal and decrease over time. Therefore, no additional action is recommended to address surface water and sediment adjacent to these sites from the groundwater pathway. However, as discussed in Section 6.2.5, the Navy will further assess mercury in sediment near Site 34 where the elevated mercury was detected in the adjacent wetland area (YSA14-SD04). Thus, future sediment sampling in this area of the wetland,

which would occur outside the scope of this RI and the subsequent FS for groundwater, would focus on delineating the extent of elevated mercury to determine if the area is large enough to warrant an additional action.

SECTION 11

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Appendix A
Boring Logs

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 8-GW01

SHEET: 1 OF 1

PROJECT NUMBER: 62470-0363
PROJECT NAME: YORKTOWN WEAPONS STATION
LOCATION: YORKTOWN, VIRGINIA
DRILLING COMPANY: PARRATT-WOLFF, INC.
RIG TYPE & NUMBER: INGERSOL-RAND A-300
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: CLEAR, COLD
GEOLOGIST: MARLENE IVESTER
ENV. SCIENTIST:
DATE BEGUN: 1/18/97 DATE COMPLETED: 1/18/97

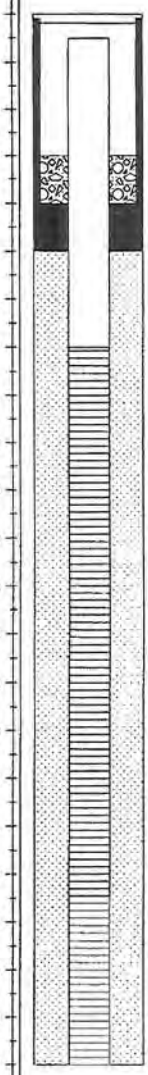
GROUND SURFACE ELEVATION: 15.7
TOP OF PVC CASING ELEVATION: 18.3

WELL DETAILS (FT)

STICKUP:
LENGTH OF RISER (2"I.D.): 6.5
LENGTH OF SCREEN (2"I.D.): 15
THICKNESS OF GROUT: 1
THICKNESS OF SEAL: 1
THICKNESS OF SAND PACK: 17

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION
										SILT: little clay, little sand -fine, some shell frags, tan, damp to wet, med. stiff
	5.0–6.0		S-1	SS	4 5 6 7	1.8	0	0		Water at 6' bgs
	7.0–8.0		S-2	SS	4 5 6 6	1.9	0	0		
	14.0–15.0		S-3	SS	10 12 12 13	0.0	0	0		
	16.0–17.0		S-4	SS	7 6 12 7	0.0	0	0		
	18.0–19.0		S-5	SS	9 10 16 15	1.8	0	0		END OF BORING AT 19' BGS

WELL INSTALLATION



BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 8-GW01A

SHEET: 1 OF: 4

PROJECT NUMBER: 62470-0363
PROJECT NAME: YORKTOWN WEAPONS STATION
LOCATION: YORKTOWN, VIRGINIA
DRILLING COMPANY: PARRATT-WOLFF, INC.
RIG TYPE & NUMBER: INGERSOL-RAND A-300
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: CLEAR, COLD
GEOLOGIST: MARLENE IVESTER
ENV. SCIENTIST:
DATE BEGUN: 1/17/97 DATE COMPLETED: 1/18/97

GROUND SURFACE ELEVATION: 15.4
TOP OF PVC CASING ELEVATION: 17.94

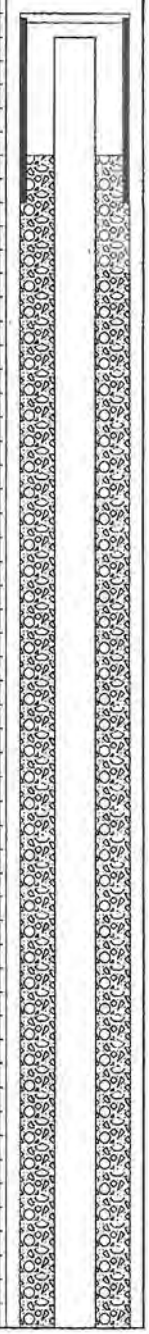
WELL DETAILS (FT)

STICKUP:
LENGTH OF RISER (2"I.D.): 87.5
LENGTH OF SCREEN (2"I.D.): 15
THICKNESS OF GROUT: 81
THICKNESS OF SEAL: 2
THICKNESS OF SAND PACK: 17

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION
15.00	0.0–1.0		S-1	SS	1 3 3 4	1.2	0	0		SILT little clay, trace sand -fine, little gravel, orange brown, moist, med. stiff
14.00	1.0–2.0									
13.00	2.0–3.0		S-2	SS	3 5 5 6	1.2	0	0		
12.00	3.0–4.0									
11.00	4.0–5.0		S-3	SS	3 4 3 4	1.2	0	0		
10.00	5.0–6.0									Water at 6' bgs
9.00	6.0–7.0		S-4	SS	3 4 5 5	1.0	0	0		
8.00	7.0–8.0									
7.00	8.0–9.0		S-5	SS	2 3 2 2	1.7	0	0		
6.00	9.0–10.0									
5.00	10.0–11.0		S-6	SS	2 2 1 2	1.0	0	0		
4.00	11.0–12.0									
3.00	12.0–13.0		S-7	SS	2 2 3 2	1.8	0	0		SAND -fine to medium and SILT some shell frags, lt. gray to red brown, wet, loose
2.00	13.0–14.0									
1.00	14.0–15.0		S-8	SS	3 3 4 3	1.3	0	0		
0.00	15.0–16.0									
-1.00	16.0–17.0		S-9	SS	1 2 2 3	1.1	0	0		
-2.00	17.0–18.0									
-3.00	18.0–19.0		S-10	SS	2 3 3 2	1.6	0	0		
-4.00	19.0–20.0									
-5.00	20.0–21.0		S-11	SS	2 4 7 8	1.7	0	0		
-6.00	21.0–22.0									
-7.00	22.0–23.0		S-12	SS	6 9 13 17	1.9	0	0		
-8.00	23.0–24.0									
-9.00	24.0									

DEPTH

WELL INSTALLATION



BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 8-GW01A

SHEET 2 OF 4

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
-9.00	24.0									SAND little silt some shell frags, tan, wet, med. dense	24.0	
-10.00	25.0		S-13	SS	9 11 14 13	1.9	0	0			25.0	
-11.00	26.0										26.0	
-12.00	27.0		S-14	SS	7 9 21 20	1.9	0	0			27.0	
-13.00	28.0										28.0	
-14.00	29.0		S-15	SS	4 7 8 11	1.9	0	0			29.0	
-15.00	30.0										30.0	
-16.00	31.0		S-16	SS	12 15 21 24	1.8	0	0		SAND: Fine to medium, trace to some silt, trace to little clay, trace to little shell frags, blue gray, wet, dense	31.0	
-17.00	32.0										32.0	
-18.00	33.0		S-17	SS	13 23 6 4	1.5	0	0			33.0	
-19.00	34.0										34.0	
-20.00	35.0		S-18	SS	12 11 13 10	1.1	0	0			35.0	
-21.00	36.0										36.0	
-22.00	37.0		S-19	SS	8 7 7 8	1.7	0	0			37.0	
-23.00	38.0										38.0	
-24.00	39.0		S-20	SS	3 3 4 3	1.6	0	0			39.0	
-25.00	40.0										40.0	
-26.00	41.0		S-21	SS	3 5 9 11	1.8	0	0			41.0	
-27.00	42.0										42.0	
-28.00	43.0		S-22	SS	8 9 10 26	1.9	0	0			43.0	
-29.00	44.0										44.0	
-30.00	45.0		S-23	SS	6 6 9 13	1.7	0	0			45.0	
-31.00	46.0										46.0	
-32.00	47.0		S-24	SS	9 11 20 30	1.9	0	0			47.0	
-33.00	48.0										48.0	
-34.00	49.0		S-25	SS	6 6 7 11	1.8	0	0			49.0	
-35.00	50.0										50.0	
-36.00	51.0		S-26	SS	8 11 15 21	1.9	0	0			51.0	
-37.00	52.0										52.0	
-38.00	53.0		S-27	SS	12 14 19 21	1.9	0	0			53.0	
-39.00	54.0										54.0	
-40.00	55.0		S-28	SS	15 17 12 22	1.9	0	0			55.0	
-41.00	56.0										56.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: B-GW01A

SHEET: 3 OF: 4

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION
-41.00	56.0									SAND: Fine to medium, trace to some silt, trace to little clay, trace to little shell frags, blue gray, wet, dense
-42.00	57.0		S-29	SS	10 8 12 15	1.9	0	0		
-43.00	58.0									
-44.00	59.0		S-30	SS	11 17 19 20	1.9	0	0		
-45.00	60.0									
-46.00	61.0		S-31	SS	11 13 19 25	1.9	0	0		
-47.00	62.0									
-48.00	63.0		S-32	SS	11 8 15 18	1.9	0	0		
-49.00	64.0									
-50.00	65.0		S-33	SS	18 20 21 25	1.9	0	0		
-51.00	66.0									
-52.00	67.0		S-34	SS	11 18 15 14	1.9	0	0		
-53.00	68.0									
-54.00	69.0		S-35	SS	12 12 11 15	1.9	0	0		
-55.00	70.0									
-56.00	71.0									
-57.00	72.0									
-58.00	73.0									
-59.00	74.0									
-60.00	75.0		S-36	SS	9 11 11 13	1.9	0	0		
-61.00	76.0									
-62.00	77.0									
-63.00	78.0									
-64.00	79.0									
-65.00	80.0		S-37	SS	7 7 7 11	1.9	0	0		
-66.00	81.0									
-67.00	82.0									
-68.00	83.0									
-69.00	84.0									
-70.00	85.0		S-38	SS	4 4 7 11	1.9	0	0		
-71.00	86.0									
-72.00	87.0									
-73.00	88.0									

DEPTH

WELL INSTALLATION

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 8-GW01A

SHEET 4 OF 4

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
-73.00	88.0									SAND: fine to medium, trace to some silt, trace to little clay, trace to little shell frags, blue gray, wet, dense	88.0	
-74.00	89.0										89.0	
-75.00	90.0										90.0	
-76.00	91.0		S-39	SS	11 11 12 12	1.9	0	0			91.0	
-77.00	92.0										92.0	
-78.00	93.0										93.0	
-79.00	94.0										94.0	
-80.00	95.0										95.0	
-81.00	96.0										96.0	
-82.00	97.0										97.0	
-83.00	98.0		S-40	SS	10 12 11 13	1.9	0	0			98.0	
-84.00	99.0										99.0	
-85.00	100.0									END OF BORING AT 100' BGS	100.0	
-86.00	101.0										101.0	
-87.00	102.0										102.0	
-88.00	103.0										103.0	
-89.00	104.0										104.0	
-90.00	105.0										105.0	
-91.00	106.0										106.0	
-92.00	107.0										107.0	
-93.00	108.0										108.0	
-94.00	109.0										109.0	
-95.00	110.0										110.0	
-96.00	111.0										111.0	
-97.00	112.0										112.0	
-98.00	113.0										113.0	
-99.00	114.0										114.0	
-100.00	115.0										115.0	
-101.00	116.0										116.0	
-102.00	117.0										117.0	
-103.00	118.0										118.0	
-104.00	119.0										119.0	
-105.00	120.0										120.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 8-GW02

SHEET: 1 OF: 1

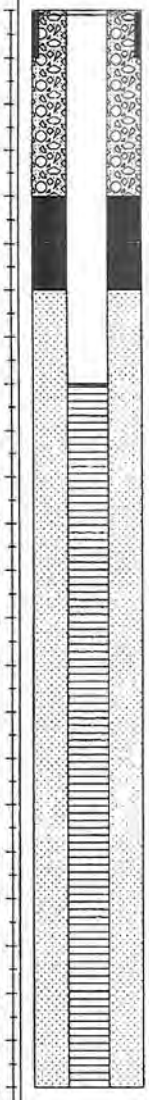
PROJECT NUMBER: 62470-0363
PROJECT NAME: YORKTOWN WEAPONS STATION
LOCATION: YORKTOWN, VIRGINIA
DRILLING COMPANY: PARRATT-WOLFF, INC
RIG TYPE & NUMBER: INGERSOL-RAND A-300
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: CLEAR, COLD
GEOLOGIST: MARLENE IVESTER
ENV SCIENTIST:
DATE BEGUN: 1/18/97 DATE COMPLETED: 1/18/97

GROUND SURFACE ELEVATION: 16.4
TOP OF PVC CASING ELEVATION: 15.72

WELL DETAILS (FT)

STICKUP:
LENGTH OF RISER (2"I.D.): 8
LENGTH OF SCREEN (2"I.D.): 15
THICKNESS OF GROUT: 4
THICKNESS OF SEAL: 2
THICKNESS OF SAND PACK: 17

SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION
S-1	SS	1 4 3 5	1.2	0	0		SILT little clay, little sand -fine, orange-tan, damp to moist, med stiff
S-2	SS	3 3 2 3	1.0	0	0		
S-3	SS	1 2 2 3	1.0	0	0		
S-4	SS	1 2 2 1	0.2	0	0		
S-5	SS	2 1 1 2	1.0	0	0		SILT and shell frags, little fine sand, tan to brown, wet, med stiff Water at 10' bgs
S-6	SS	1 3 2 3	1.7	0	0		
S-7	SS	5 6 5 6	1.8	0	0		
S-8	SS	5 5 8 12	1.9	0	0		
							END OF BORING AT 23' BGS



BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 8-GW03

SHEET: 1 OF: 1

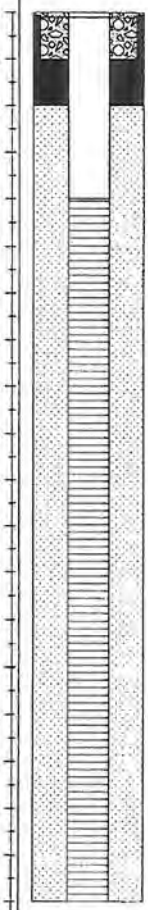
PROJECT NUMBER: 62470-0363
PROJECT NAME: YORKTOWN WEAPONS STATION
LOCATION: YORKTOWN, VIRGINIA
DRILLING COMPANY: PARRATT-WOLFF, INC
RIG TYPE & NUMBER: INGERSOL-RAND A-300
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: CLEAR, COLD
GEOLOGIST: MARLENE IVESTER
ENV. SCIENTIST:
DATE BEGUN: 1/18/97 DATE COMPLETED: 1/18/97

GROUND SURFACE ELEVATION: 16.7
TOP OF PVC CASING ELEVATION: 16.33

WELL DETAILS (FT)

STICKUP:
LENGTH OF RISER (2"I.D.): 4
LENGTH OF SCREEN (2"I.D.): 15
THICKNESS OF GROUT: 1
THICKNESS OF SEAL: 1
THICKNESS OF SAND PACK: 17

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
16.00	0.0									Asphalt	0.0	
15.00	1.0		S-1	SS	1 6 8 8	1.2	0	0		SILT: little clay, trace sand -fine, orange to tan, damp to moist, med. stiff	1.0	
14.00	2.0										2.0	
13.00	3.0		S-2	SS	4 8 7 4	1.2	0	0			3.0	
12.00	4.0										4.0	
11.00	5.0		S-3	SS	4 5 4 5	1.7	0	0		Water at 6' bgs	5.0	
10.00	6.0									SILT: little clay, little fine sand, some shell frags, tan, wet, med. stiff	6.0	
9.00	7.0		S-4	SS	3 2 2 2	1.2	0	0			7.0	
8.00	8.0										8.0	
7.00	9.0		S-5	SS	1 1 1 1	1.1	0	0			9.0	
6.00	10.0										10.0	
5.00	11.0		S-6	SS	1 1 1 2	1.6	0	0			11.0	
4.00	12.0										12.0	
3.00	13.0										13.0	
2.00	14.0										14.0	
1.00	15.0										15.0	
0.00	16.0										16.0	
-1.00	17.0		S-7	SS	4 4 2 8	1.6	0	0			17.0	
-2.00	18.0										18.0	
-3.00	19.0									END OF BORING AT 19' BGS	19.0	
-4.00	20.0										20.0	
-5.00	21.0										21.0	
-6.00	22.0										22.0	
-7.00	23.0										23.0	
-8.00	24.0										24.0	
-9.00	25.0										25.0	
-10.00	26.0										26.0	
-11.00	27.0										27.0	
	28.0										28.0	



BAKER

TEST BORING LOG

BOREHOLE NUMBER: 8-SB09

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-0363
PROJECT NAME: YORKTOWN WEAPONS STATION
LOCATION: YORKTOWN, VIRGINIA
DRILLING COMPANY: PARRATT-WOLFF, INC.
RIG TYPE & NUMBER: INGERSOL-RAND A-300
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: CLEAR, COLD
GEOLOGIST: MARLENE IVESTER
ENV. SCIENTIST:
DATE BEGUN: 1/20/97 DATE COMPLETED: 1/20/97

GROUND SURFACE ELEVATION: 16.41
TOTAL DEPTH:

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
										Asphalt	
			S-1	SS	2 2 2 3	0.5	0	0		SILT: little clay, little sand -Fine, trace shel frags, tan, damp to wet, med. stiff	
			S-2	SS	3 5 4 3	1.6	0	0			
			S-3	SS	4 5 2 3	0.5	0	0			
			S-4	SS	2 3 2 2	0.25	0	0			
										END OF BORING AT 9' BGS	

Elevation scale: 16.00, 15.00, 14.00, 13.00, 12.00, 11.00, 10.00, 9.00, 8.00, 7.00, 6.00, 5.00, 4.00, 3.00, 2.00, 1.00, 0.00, -1.00, -2.00, -3.00, -4.00, -5.00, -6.00, -7.00, -8.00, -9.00, -10.00, -11.00, -12.00

Depth scale: 0.0, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 13.0, 14.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0, 21.0, 22.0, 23.0, 24.0, 25.0, 26.0, 27.0, 28.0

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: A19-GW01

SHEET 1 OF 1

PROJECT NUMBER: 62470-0353
PROJECT NAME: YORKTOWN WEAPONS STATION
LOCATION: YORKTOWN, VIRGINIA
DRILLING COMPANY: PARRATT-WOLFF, INC
RIG TYPE & NUMBER: INGERSOL-RAND A-300
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: CLEAR, COLD
GEOLOGIST: MARLENE IVESTER
ENV. SCIENTIST:
DATE BEGUN: 1/19/97 DATE COMPLETED: 1/19/97

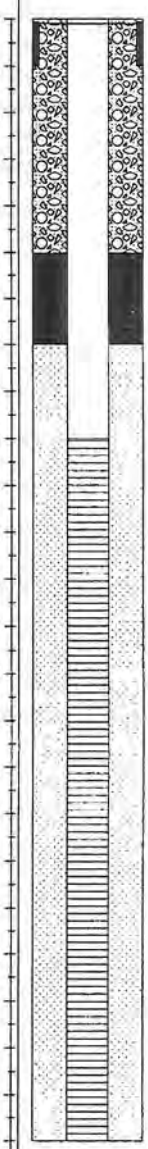
GROUND SURFACE ELEVATION: 18.0
TOP OF PVC CASING ELEVATION: 17.57

WELL DETAILS (FT)

STICKUP
LENGTH OF RISER (2"I.D.): 9
LENGTH OF SCREEN (2"I.D.): 15
THICKNESS OF GROUT: 5
THICKNESS OF SEAL: 2
THICKNESS OF SAND PACK: 17

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION
18.00	0.0									
17.00	1.0		S-1	SS	2 3	0.75	0	0		SILT little clay, trace sand -fine, some shell frags, tan, damp, wet, med stiff
16.00	2.0									
15.00	3.0		S-2	SS	5 4 7 6	1.5	0	0		
14.00	4.0									
13.00	5.0		S-3	SS	4 7 8 10	1.6	0	0		
12.00	6.0									
11.00	7.0		S-4	SS	7 9 10 8	1.6	0	0		
10.00	8.0									
9.00	9.0		S-5	SS	4 5 6 6	1.8	0	0		
8.00	10.0									
7.00	11.0		S-6	SS	3 3 5 7	1.8	0	0		Water at 11' bgs
6.00	12.0									
5.00	13.0		S-7	SS	4 5 7 9	1.8	0	0		
4.00	14.0									
3.00	15.0		S-8	SS	1 1 1 1	1.4	0	0		SAND -fine and SILT shell frags, lt brown, wet, loose
2.00	16.0									
1.00	17.0		S-9	SS	2 2 3 2	1.3	0	0		
0.00	18.0									
-1.00	19.0		S-10	SS	2 3 7 5	1.7	0	0		
-2.00	20.0									
-3.00	21.0		S-11	SS	5 6 6 8	1.9	0	0		SAND some silt, some shell frags, tan, wet, med dense
-4.00	22.0									
-5.00	23.0		S-12	SS	7 9 6 9	1.9	0	0		
-6.00	24.0									END OF BORING AT 24' BGS
-7.00	25.0									
-8.00	26.0									
-9.00	27.0									
-10.00	28.0									

WELL INSTALLATION



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TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site 8
CTO NO.: 62470-363 BORING NO.: 8-GW04
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Truck	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.375		4.25		5/12/2000	0.0 - 44.0	Sunny, 80	36
Length	2.0		5.0					
Type	STD		HSA					
Hammer Wt.	140							
Fall	30"							

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample H=Hand Spoon

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 .010 Slot Screen	2"	34	44
Sch 40 Riser	2"	0	34

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1	S-1	0.8	2-2-2-2			Zone 1 (0 - 0.3'), Top soil Zone 2 (0.3 - 0.8'), SILT, little fine sand, trace clay, light brown, dry		
2								
3								
4	S-2	1.8	4-5-6-7			CLAY, some silt, light brown/ gray mottled, damp		
5								
6								
7								
8								
9	S-3	1.5	3-3-7-10			Zone 1 (0 - 0.5'), Same Zone 2 (0.5 - 1.5'), SILT, little clay, little fine sand, red/brown with little gray mottles, damp		
10								

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: 8-GW04 SHEET 1 OF 3

Baker
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TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site 8
CTO NO.: 62470-363 BORING NO.: 8-GW04

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13								
14	S-4	1.5	3-3-5-6			Zone 1 (0 - 1.0'), Same Zone 2 (1.0 - 1.5'), SILT and clay interbedded stringers, red/brown and gray, damp		
15								
16								
17								
18								
19	S-5	1.0	1-2-2-2			CLAY and silt stringers, trace very fine sand, clay is gray, red/ brown silt, moist		
20								
21								
22								
23								
24	S-6	1.0	1-1-1-1			SILT and clay, light brown and gray, moist		
25								
26								
27								
28								
29	S-7	1.2	2-2-1-2			SILT, little clay, fine sand some shell fragments, gray, wet		
30								

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: 8-GW04 SHEET 2 OF 3

Baker
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TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site 8
CTO NO.: 62470-363 BORING NO.: 8-GW04

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31						Continued from Sheet 2	Bent. chips	
32								
33							Sand pack	
34	S-8	1.3	2-3-3-4			Same	Top of screen	
35								
36								
37								
38								
39	S-9	1.8	6-6-7-7			SAND, fine, and silt, little shell fragments, gray/brown, wet		
40								
41								
42								
43								
44	S-10	2.0	6-10-8-8			Same		
45						Boring terminated and well set at 44'.		
46								
47								
48								
49								
50								

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: 8-GW04 SHEET 3 OF 3

Baker
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TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site 8
CTO NO.: 62470-363 BORING NO.: 8-GW05
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Truck	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.375		4.25		5/16/2000	0.0 - 20.0	Sunny, 80	11
Length	2.0		5.0					
Type	STD		HSA					
Hammer Wt.	140							
Fall	30"							

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample H=Hand Spoon

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 .010 Slot Screen	2"	10	20
Sch 40 Riser	2"	0.5	10

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1							Flush-mt Cover	
2								
3								
4								
5	S-1	0.4	4-5-5-7			CLAY, some silt, trace sand brown, moist		
6								
7							Bent. Chips	
8								
9							Sand pack	
10	S-2	1.3	1-2-2-2			SILT, some shells, little clay light brown, wet	Top of screen	

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: 8-GW05 SHEET 1 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site 8

CTO NO.: 62470-363 BORING NO.: 8-GW05

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						Groundwater level		
12								
13								
14								
15	S-3	1.5	4-4-9-8			SAND and shell fragments, light brown-tan, wet		
16								
17	S-4	1.0	8-10-10-19			Same		
18								
19								
20						Boring terminated and well set at 20'.		
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin

DRILLER: Jim Lansing BORING NO.: 8-GW05 SHEET 2 OF 2

Baker
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TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site SSA14
CTO NO.: 62470-363 BORING NO.: SSA14-GW01A
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Truck	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.375		4.25		5/20/2000	0.0 - 80.0	Sunny, 80	11.8
Length	2.0		5.0					
Type	STD		HSA					
Hammer Wt.	140							
Fall	30"							

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample H=Hand Spoon

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 .010 Slot Screen	2"	70	80
Sch 40 Riser	2"	0.5	70

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
							Flush mount cover	
20	S-1	1.5	7-7-7-7			Groundwater level @ 12' SAND, fine, some silt, little shell tan/orange, iron staining, wet		
30								
40	S-2	2.0	4-4-4-6			SAND, very fine and silt, little shell fragments (gastropods), olive/army green, wet		
50								
						Match to Sheet 2		

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: A14-GW01A SHEET 1 OF 2

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site SSA14

CTO NO.: 62470-363 BORING NO.: SSA14-GW01A

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
60	S-3	2	7-7-9-14			SAND, very fine, some silt olive/army green, wet		
70	S-4	2.0	4-4-4-7			SILT, trace very fine sand little shell, olive/army green, wet	Bent. Sand Top of screen	
75								
80	S-5	2.0	3-3-5-7			Same		
						Boring terminated and well set at 80'.		

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin

DRILLER: Jim Lansing BORING NO.: A14-GW01A SHEET 2 OF 2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site SSA14
CTO NO.: 62470-363 BORING NO.: SSA14-GW02
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Truck	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.375		4.25		5/17/2000	0.0 - 20.0	Sunny, 80	14
Length	2.0		5.0					
Type	STD		HSA					
Hammer Wt.	140							
Fall	30"							

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample H=Hand Spoon

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 .010 Slot Screen	2"	10	20
Sch 40 Riser	2"	0.5	10

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1							Flush mount cover	
2								
3								
4	S-1	0.3	3-3-3-8			CLAY, some silt, trace sand orange/brown, mottled gray, moist		
5								
6								
7							Bent. Chips	
8								
9	S-2	0.5	3-4-5-6			Same	Sand pack	
10						Match to Sheet 2	Top of screen	

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: SSA14-GW02 SHEET 1 OF 2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site SSA14
CTO NO.: 62470-363 BORING NO.: SSA14-GW02

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13								
14	S-3	1.0	1-1-1-1			Zone1 (0-0.5'), Same Zone2 (0.5-1.0'), SAND, fine, some silt, some shell fragments, gray, green, brown layers, wet		
15								
16								
17								
18	S-4	2.0	2-3-4-5			SAND, fine, trace silt, trace shell fragments, light brown/tan,wet		
19								
20						Boring terminated and well set at 20'.		
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: SSA14-GW02 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site SSA14

CTO NO.: 62470-363 BORING NO.: SSA14-GW03

COORDINATES: EAST: NORTH:

ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Truck	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.375		4.25		5/19/2000	0.0 - 20.0	Sunny, 80	13
Length	2.0		5.0					
Type	STD		HSA					
Hammer Wt.	140							
Fall	30"							

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample H=Hand Spoon

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 .010 Slot Screen	2"	10	20
Sch 40 Riser	2"	0.5	10

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1							Flush mount cover	
2								
3								
4								
5	S-1	0.5	3-4-5-4			SILT and clay, iron staining tan, moist		
6								
7							Bent. Chips	
8								
9							Sand pack	
10	S-2	0.3	2-2-3-2			SILT and clay, little shells, olive green, moist	Top of screen	

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin

DRILLER: Jim Lansing BORING NO.: SSA14-GW03 SHEET 1 OF 2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site SSA14
CTO NO.: 62470-363 BORING NO.: SSA14-GW03

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13						Groundwater level		
14								
15	S-3	2.0	2-2-2-2			SAND, fine, some silt, some clay, some shell fragments brown to tan, wet		
16								
17								
18	S-4	1.0	2-2-3-2			SAND very fine, some silt, some shell fragments, brown/ green, wet		
19								
20						Boring terminated and well set at 20'.		
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: SSA14-GW03 SHEET 2 OF 2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site SSA14
CTO NO.: 62470-363 BORING NO.: SSA14-GW04A
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Truck	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1.375		4.25		5/17/2000	0.0 - 20.0	Sunny, 80	35
Length	2.0		5.0		5/18/2000	20.0 - 100.0	Sunny, 80	
Type	STD		HSA					
Hammer Wt.	140							
Fall	30"							

Remarks:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample H=Hand Spoon

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 .010 Slot Screen	2"	90	100
Sch 40 Riser	2"	0	90

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
5	S-1	1.3	6-7-11-14			SILT and clay, trace fine sand with iron staining, orange/brown tan, moist		
10	S-2	1.0	5-5-7-9			Same, with no sand		
15	S-3	1.3	4-5-6-4			SILT and clay, slight iron stains, cohesive, tan, moist		
20	S-4	1.8	2-3-3-6			CLAY, trace silt, tan/orange/gray moist		
40	S-5	1.5	3-5-7-4			SAND, very fine and silt, some shell fragments, fine organics, olive, wet		
						Match to Sheet 2		

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: A14-GW04A SHEET 1 OF 2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation, Site SSA14
CTO NO.: 62470-363 BORING NO.: SSA14-GW04A

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source

Depth (feet)	Sample Type & No.	Sample Rec. (feet)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
60	S-6	2.0	2-16-17-12			Same, gray/green/olive		
80	S-7	2.0	5-6-10-15			Same, army green/olive, trace shell		
85	S-8	2.0	3-6-16-26			Same		
90							Bent. chips Sand pack	
95	S-9	2.0	5-4-4-8			SILT, little shell, army green/ olive, wet	Top of screen	
100						Boring terminated and well set at 100'.		

DRILLING CO.: Parrot Wolfe BAKER REP.: David Martin
DRILLER: Jim Lansing BORING NO.: A14-GW04A SHEET 2 OF 2

A14GW01A TD= 80.6'
SWL= 12.3'
68.3 x .163
= 11.1 gal

TIME	WELL VOL/GAL	pH	COND	TEMP	DESCRIP
1045	1/11	~~10~~ 9.53	.354/1.58	15.5°C	DK GREEN-GRAY TURB>999
1109	2/22	9.06	.543/2.41	14.7°C	(SAME)
* 1209	3/33	8.87	.542/2.41	15.1°C	LIGHTER GREEN-GRAY TURB>999
* 1235	~~4/44 gal~~ -/38	8.96	.499/2.22	15.4°C	TURB=372
1312	4/44	8.95	.504/2.25	15.2°C	V. LT GREEN-GRAY TURB=74
1401	4.5/49.5	8.94	.517/2.29	15.1°C	LT GREEN GRAY TO LT BROWN TURB=
1409	51.0				

→ WELL DRY

(DEVELOPMENT COMPLETE @ 1410)

* WELL GOING DRY BTWN VOLUMES AND DURING

LOTS OF FINE, MED TO DARK GRAY, SAND IN BOTTOM OF BUCKET

MKP

A14GW03 TD= 19.7'
SWL= 13.0'
6.7 x .163
= 1.09 gal

	TIME	pH	COND	TEMP (°C)	DESCRIPTION
(1)	1429	8.24	0.98	15.7	LT ORANGE-BEIGE TURB >999
(2)	1431	8.03	0.98	16.7	(SAME)
(3)	1434	8.01	0.97	16.8	(SAME)
(4)	1438	8.00	0.97	16.6	COLOR A LITTLE LIGHTER OTHERWISE, THE SAME
(5)	1442	8.00	0.98	16.8	(SAME AS VOL 4)

(1) VOL 1/1 gal
(2) VOL 2/2 gal
(3) VOL 3/3 gal
(4) VOL 4/4 gal
(5) VOL 5/5 gal

(DEVELOPMENT COMPLETE AT 1443)

MKP

A14GW02

TD= 19.2'
SWL= 7.4'
11.8 x .163
= 1.92 gal

TIME	WELL VOL/GAL	pH	COND	(°C) TEMP	DESCRIPTION
~~1621~~ 1421	1/2	8.20	.643/ 2.85	15.0	LT BEIGE TURB>999
~~1628~~ 1428	2/4	7.97	.655/ 2.91	15.7	LT BEIGE TURB>999
~~1635~~ 1435	3/6	7.86	.655/ 2.90	16.0	LT BEIGE TURB>999
1442	4/8	7.83	↑ .665/ 2.95	↑ 16.2	LT BEIGE TURB>999
1449	5/10	7.89	.646/ 2.87	16.2	LT BEIGE TURB>999

(DEVELOPMENT COMPLETE @ 1450)

A GOOD BIT OF VERY FINE-GRAINED BEIGE ~~(to BLK)~~ MKI SAND IN BOTTOM OF BUCKET
~~BLACK~~ MKI
LT BROWN

MKI

(CONT FM 19)
1410 BEGIN DEVELOPING A14GW02
1431 A14GW01A TD= 80.6
(SWL= 11.6')
↳ WILL NEED ANOTHER 100' ROLL OF 3/4"
1450 FINISH DEVELOPING A14GW02.
START BREAK DOWN
1500 RELOCATE TO 86GW05
1520 BEGIN DEVELOPING 86GW05
1543 FINISH DEVELOPING 86GW05
START BREAK DOWN
1555 BREAK DOWN COMPLETE. RELOCATE TO VICINITY ON 86GW04 TO GET TOTAL DEPTH MEASUREMENT
1604 86GW04 TD= 47.0'
SWL= 31.9'
1610 SIGN-OUT @ BLDG 457
1612 DPT INDIAN HEAD AREA
1615 ARR SITE TRAILER (DAVE MARTIN)
↳ LEAVE MESSAGE FOR DJM
RE: A14GW03 (DOESN'T EXIST?)
↳ UNPACK EQUIP.
1640 DPT WEAPONS STA YORKTOWN.
NO FURTHER ENTRIES THIS DAY

MKI

SUNNY, COLD (30-40s)

0850 DPT HOUSE IN SUFFOLK, VA
0900 ARR LOWE'S
↳ GET TUBING, ETC.
0910 DPT LOWE'S
0950 ARR WEAPONS STA YORKTOWN, SITE TRAILER
↳ LOAD EQUIPMENT
1005 DPT SITE TRAILER
1010 ARR BLDG 457, INDIAN HEAD
↳ SIGN VISITORS LOG
↳ CHECK w/ STAFF (TOMMY NOT IN) THAT I HAVE CLEARANCE.
1020 DPT BLDG 457
1025 ARR SITE TRAILER
↳ GET FIRE EXTINGUISHER
1030 DPT SITE TRAILER
1035 ARR INDIAN HEAD AREA, SSA14
1038 LOCATE NEAR A14GW04A FOR DEVELOPMENT
1120 SET-UP ON A14GW04A COMPLETE. BEGIN DEVELOPMENT
1147 AMOUNT OF H_2O EXITING TUBING HAS DECREASED QUITE A BIT. ∴ TURN PUMP RATE DOWN.

(CONT ON 18)

MKD

A14GW04A

TD = 103.0'
SWL = 35.5'
67.5 x .163
= 11.00 gal

TIME	WELL VOL/GAL	pH	COND	TEMP (°C)	DESCRIPTION
1135	1/11.0	9.35	.307/ 1.37	16.5	INITIALLY CLEAR, THEN QUICKLY Δ TO A DARK GREENISH GRAY
1150	2/22.0	8.77	.415/ 1.85	15.9	DK GREEN-GRAY TURB > 999
* 1230	3/33.0	8.80	.397/ 1.77	16.4	SLIGHTLY LIGHTER THAN 1st TWO VOL, BUT STILL DK GREEN-GRAY TURB > 999
* 1306	4/44.0	8.82	.396/ 1.76	16.1	LT GREEN-GRAY TURB = 243
1327	5/55.0	8.70	.401/ 1.79	16.3	LT GREEN-GRAY TURB = 616

(DEVELOPMENT COMPLETE @ 1329 → SEE NOTE ON 19)

* BTWN VOL 2→3 AND 3→4 WELL GOES DRY.
LOTS OF FINE DK GRAY SAND IN BOTTOM OF BUCKET

MKD

84W04

TD= 47.0'
SWL= 31.8'
15.2 X .163
= 2.477

TIME	WELL VOL/GAL	pH	COND	TEMP	DESCRIP
1013	1/2.5	8.71	.616/2.73	15.4°C	MED. DRAB BROWN/E, TURB>999
1017	2/5.0	8.44	.617/2.84	15.4°C	(SAME)
1021	3/7.5	8.26	.646/2.86	15.5°C	(SAME)
1025	4/10	8.24	.647/2.87	15.5°C	(SAME)
1029	5/12.5	8.28	.646/2.87	15.4°C	(SAME)

(DEVELOPMENT COMPLETE @ 1030)

MKD

(CONT FM 29)
1630-1800 DRIVE TIME (NO CHARGE)
1800-1830 LOWE'S, FOODLION AND GAS STATION TO GET SUPPLIES FOR TOMORROW.

NO FURTHER ENTRIES THIS DAY

MKD

86W05

TD= 19.2'
SWL= 10.1'
9.1 x .163
= 1.48

TIME	WELL VOL/GAL	pH	COND	(°C) TEMP	DESCRIP.
1526	1/1.5	8.03	.840/ 3.72	15.8	LT BEIGE TURB>999
1530	2/3.0	7.93	.838/ 3.70	16.1	LT BEIGE TURB>999
1534	3/4.5	7.95	.814/ 3.60	16.2	LT BEIGE TURB>999
1538	4/6.0	8.05	.798/ 3.53	15.5	LT BEIGE TURB>999
1542	5/7.5	7.92	.794/ 3.52	16.2	LT BEIGE TURB>999

(DEVELOPMENT COMPLETE @ 1543)

AS W/ A14GW02, A GOOD BIT OF VERY FINE-GRAINED ~~BEIGE~~ BLACK SAND COLLECTED IN THE BUCKET. ~~(TO BLK)~~ MED TO LT BROWN W/ BLK FLAKES

MKD

0850 DPT HOUSE IN SUFFOLK
0910 ARR LOWE'S
↳ GET ANOTHER 100' OF 1/4" TUBING
0910 DPT LOWE'S
0950 ARR WEAPONS STA YORKTOWN
LOAD EQUIP.
0957 DPT SITE TRAILER
1000 ARR INDIAN HEAD, BLDG 457
↳ CHECK IN W/ TONY
1005 DPT BLDG 457, RELOCATING TO A14GW01A
1025 BEGIN DEVELOPING A14GW01A
1135 FOR THE FIRST TWO WELL VOLUMES, I HAD TO PHYSICALLY HOLD ~~DOWN~~ DOWN THE WATTERA TO KEEP IT FROM BOUNCING. THIS WAS NOT ONLY TIRING, BUT INEFFICIENT. ∴ I WENT BACK TO THE FIELD TRAILER TO GET THE SAND BAGS IN THE CONEX BOX TO USE FOR WEIGHT. THIS REMAINS THE LONG TIME BTWN THE 2ND AND 3RD VOLUMES
1140 IT'S CLOUDING UP. SUPPOSE TO RAIN (THE SKY) THIS AFTERNOON.

MKD

(CONT ON 26)

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YS08-GW07	SHEET 1 OF 1

CH2MHILL

SOIL BORING LOG

PROJECT :CTO-195 NWS Yorktown RI Site 8 LOCATION : Yorktown NWS

ELEVATION : 32.8 ft amsl DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on ATV rig - used DPT 4' acetate sleeves

WATER LEVELS : 22 ft bgs START : 08/07/08 END : 08/08/08 LOGGER : Pat Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
						PID=0.0 ppm
5'	0' - 4'	30"	1		clayey SAND (SC), 10YR 5/6 yellowish brown, dry, medium dense, fine-medium grained, no plasticity, organics	PID=0.0 ppm
10'	4' - 8'	48"	2		clayey SAND (SC), 10YR 6/8 brownish yellow, moist, dense, f/g, slight plasticity, organics	PID=0.0 ppm
	8' - 12'	48"	3		clayey SAND (SC), 7/5YR 5/8 strong brown, moist-wet, loose, f/g, slight plasticity	PID=0.0 ppm
15'	12' - 16'	48"	4		sandy CLAY (SC), 7.5YR 6/8 reddish yellow, mosit-wet, medium stiff CLAY w/ silts and f/g sand, slight plasticity	PID=0.0 ppm
20'	16" - 20'	48"	5		sandy CLAY (SC), 7.5YR 6/2 pinkish gray, moist-wet, soft CLAY with silts and f/g sand, slight plasticity	PID=0.0 ppm
25'	20' - 24'	48"	6		SAA except color is 10YR 6/6 brownish yellow	PID=0.0 ppm
30'	24' - 28'	48"	7		sandy CLAY (SC), 10YR 6/1 gray, moist-wet, soft-medium stiff CLAY w/ f/g sand and silts, shell hash ~50%	PID=0.0 ppm
	28' - 32'	48"	8		clayey SAND (SC), 10YR 6/1 gray, wet, loose, f/g, no plasticity, shell hash ~50%	PID=0.0 ppm
35'	32' - 36'	48"	9		clayey SAND (SC), 10YR 4/6 dark yellowish brown, wet-saturated, loose, f/g, no plasticity	PID=0.0 ppm
40'	36' - 40'	40"	10		fine SAND (SP), 10YR 5/6 yellowish brown, saturated, loose, f/g, no plasticity, shell hash ~40%	PID=0.0 ppm
45'	40' - 44-	30"	11		fine SAND (SP), 10YR 5/3 brown, saturated, loose, f/g, no plasticity, shell hash ~40%	PID=0.0 ppm
Well Set at 44' bgs. Screened from 22' to 44'						
50'						
55'						

CH2MHILL	PROJECT NUMBER	BORING NUMBER	
	362248.FI.MW	YS08-GW08	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 NWS Yorktown RI Site 8 — LOCATION : Yorktown NWS

ELEVATION : 18.07 ft amsl — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on ATV rig - used DPT 4' acetate sleeves

WATER LEVELS : 13 ft bgs — START : 08/09/08 — END : 08/10/08 — LOGGER : Mark Ost

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
						PID=0.0 ppm
	0' - 4'	24"	1		clayey SILT (ML), 7.5YR 5/3, dry, loose contruction fill	PID=0.0 ppm
5'						
	4' - 8'	48"	2		4'-6': SAA 6'-8': CLAY (CL), 10YR 6/4 w/ light gray mottles, dry, medium dense	PID=0.0 ppm
10'						
	8' - 12'	48"	3		8'-9': SILT (ML), 10YR 3/2, dry, loose, some organics 9'-12': clayey SILT (ML), 10YR 4/1, moist, loose, 1" layer of peat in bottom	PID=0.0 ppm
15'	12' - 16'	48"	4		12'-13': SAA 13'-16': silty SAND (SM), 10YR 6/6, saturated, loose	PID=0.0 ppm
20'	16" - 20'	48"	5		SAA	PID=0.0 ppm
25'	20' - 24'	48"	6		silty SAND (SM), 10YR 6/6, saturated, loose	PID=0.0 ppm
30'	24' - 28'	48"	7		24'-25':silty SAND (SM), 10TR 4/3, saturated, loose 25'-28': fine SAND (SM), 10YR 6/6, saturated, loose	PID=0.0 ppm
	28' - 32'	48"	8		SAA	PID=0.0 ppm

Well Set at 33' bgs. Screened from 13' to 33'

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YS08-GW09	SHEET 1 OF 1

CH2MHILL

SOIL BORING LOG

PROJECT :CTO-195 NWS Yorktown RI Site 8 — LOCATION : Yorktown NWS

ELEVATION : 16.15 ft amsl — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on ATV rig - used DPT 4' acetate sleeves

WATER LEVELS : 12 ft bgs — START : 08/05/08 — END : 08/06/08 — LOGGER : Pat Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
						PID=0.0 ppm
5'	0' - 4'	24"	1		clayey GRAVEL (GC), GLEY 1 2.5/N black, dry, coarse gravel, organics	PID=0.0 ppm
10'	4' - 8'	48"	2		clayey SAND (SC), 10YR 5/6 yellowish brown, moist, very dense SAND, fine-medium coarse	PID=0.0 ppm
	8' - 12'	24"	3		clayey SAND (SC), 10YR 4/6 dark yellowish brown, moist, very dense SAND, fine-medium coarse, some shell hash, organics (roots)	PID=0.0 ppm
15'	12' - 16'	48"	4		12'-13': clayey SAND (SC), 10YR 4/6 dark yellowish brown, wet, loose SAND, fine-grained, shell hash ~20% 13'-16': silty SAND (SM), 2.5Y 5/4 light olive brown, saturated, loose-medium dense, f/g, no plasticity, shell hash ~40%	PID=0.0 ppm PID=0.0 ppm
20'	16" - 20'	48"	5		fine SAND (SP), 2.5Y 6/1 gray, saturated, medium dense, f/g, no plasticity, shell hash ~30%	PID=0.0 ppm
25'	20' - 24'	48"	6		fine SAND (SP), 2.5Y 5/4 light olive brown, saturated, loose-medium dense, f/g, no plasticity, shell hash ~40%	PID=0.0 ppm
30'	24' - 28'	48"	7		SAA	PID=0.0 ppm
35'	28' - 32'	48"	8		fine SAND (SP), 2.5Y 5/4 light olive brown, saturated, loose-medium dense, f/g, no plasticity, shell hash ~20%	PID=0.0 ppm
	32' - 36'	48"	9		SAA, shell hash ~40%	PID=0.0 ppm
Well Set at 31' bgs. Screened from 11' - 31'						
40'						
45'						
50'						
55'						

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YS08-GW09A	SHEET 1 OF 1

CH2MHILL

SOIL BORING LOG

PROJECT :CTO-195 NWS Yorktown RI Site 8 LOCATION : Yorktown NWS

ELEVATION : 16.41 ft amsl DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on ATV rig - used DPT 4' acetate sleeves

WATER LEVELS : 12 ft bgs START : 08/06/08 END : 08/07/08 LOGGER : Pat Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
						PID=0.0 ppm
5'	0' - 4'	24"	1		clayey GRAVEL (GC), GLEY 1 2.5/N black, dry, coarse gravel, organics	PID=0.0 ppm
10'	4' - 8'	48"	2		clayey SAND (SC), 10YR 5/6 yellowish brown, moist, very dense SAND, fine-medium coarse	PID=0.0 ppm
	8' - 12'	24"	3		clayey SAND (SC), 10YR 4/6 dark yellowish brown, moist, very dense SAND, fine-medium coarse, some shell hash, organics (roots)	PID=0.0 ppm
15'	12' - 16'	48"	4		12'-13': clayey SAND (SC), 10YR 4/6 dark yellowish brown, wet, loose SAND, fine-grained, shell hash ~20% 13'-16': silty SAND (SM), 2.5Y 5/4 light olive brown, saturated, loose-medium dense, f/g, no plasticity, shell hash ~40%	PID=0.0 ppm PID=0.0 ppm
20'	16" - 20'	48"	5		fine SAND (SP), 2.5Y 6/1 gray, saturated, medium dense, f/g, no plasticity, shell hash ~30%	PID=0.0 ppm
25'	20' - 24'	48"	6		fine SAND (SP), 2.5Y 5/4 light olive brown, saturated, loose-medium dense, f/g, no plasticity, shell hash ~40%	PID=0.0 ppm
30'	24' - 28'	48"	7		SAA	PID=0.0 ppm
35'	28' - 32'	48"	8		fine SAND (SP), 2.5Y 5/4 light olive brown, saturated, loose-medium dense, f/g, no plasticity, shell hash ~20%	PID=0.0 ppm
	32' - 36'	48"	9		SAA, shell hash ~40%	PID=0.0 ppm
40'	36' - 40'	48"	10		silty SAND (SM), GLEY2 4/1 dark greenish gray, saturated, loose, f/g, no plasticity, shell hash ~40%, organics	PID=0.0 ppm
45'	40' - 44'	48"	11		SAA escept no organics found	
50'	44' - 48'	30"	12		silty SAND, GLEY2 4/1 dark greenish gray, saturated, loose, f/g, no plasticity, organics, shell hash~ 50%	PID=0.0 ppm
55'	48' - 52'	48"	13		SAA	PID=0.0 ppm

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YS08-GW09A	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 NWS Yorktown RI Site 8 LOCATION : Yorktown NWS

ELEVATION : 16.41 ft amsl DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on ATV rig - used DPT 4' acetate sleeves

WATER LEVELS : 12 ft bgs START : 08/06/08 END : 08/07/08 LOGGER : Pat Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
	52' - 56'	48"	14		silty SAND(SM) , GLEY2 4/1 dark greenish gray, wet, loose, f/g, no plasticity, shell hash ~ 40%, organics	PID=0.0 ppm
60	56 ' - 60'	48"	15		SAA	PID=0.0 ppm
65	60' - 64'	48"	16		silty SAND (SM), GLEY2 4/1 dark greenish gray, moist-wet, loose-medium dense, f/g, no plasticity, shell hash ~20%	PID=0.0 ppm
70	64' - 68'	48"	17		SAA	PID=0.0 ppm
	68' - 72'	48"	18		silty SAND (SM), GLEY2 4/1 dark greenish gray, moist, medium, f/g, no plasticity, trace shell hash	PID=0.0 ppm
75	72' - 76'	40"	19		silty SAND (SM), GLEY2 4/1 dark greenish gray, moist, medium, f/g, no plasticity	PID=0.0 ppm
Well Set at 71' bgs. Screened from 51' to 71'						
80						

PROJECT NUMBER	WELL NUMBER	
362248.FI.MW	08GW06	SHEET 1 OF 1

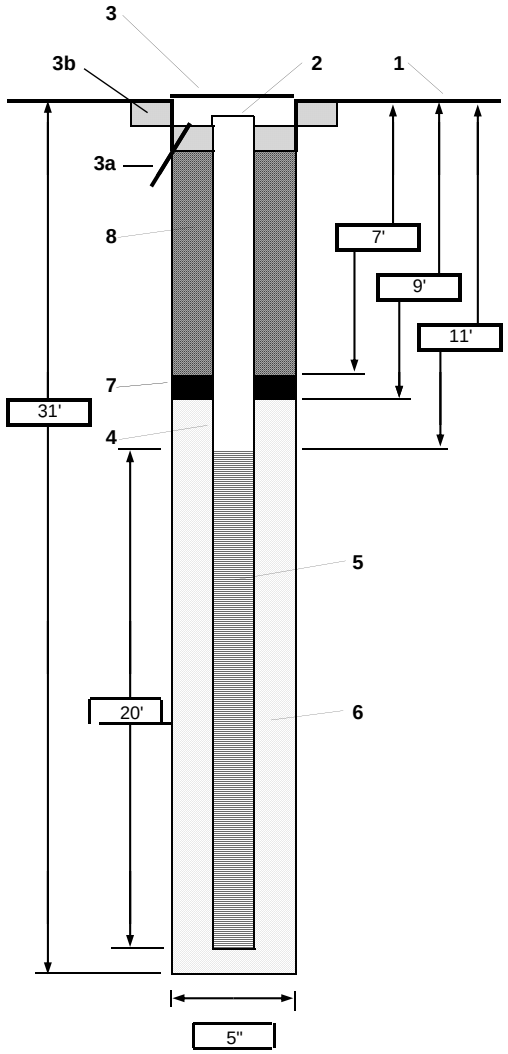
WELL COMPLETION DIAGRAM

PROJECT : RI - Sites 4, 8, 21, 22, SSA 14, AOC 23 (CTO-195) LOCATION : NWS Yorktown Site 8

DRILLING CONTRACTOR : Parrott Wolff NORTHING: 3621234.92 EASTING: 12045055.61

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : 10.23' bgs START : 10/13/07 END : 10/14/07 LOGGER : D. Livingston



1- Ground elevation at well _____

2- Top of casing elevation _____

3- Wellhead protection cover type: 2' diameter concrete pad
   a) Bollards _____
   b) concrete pad dimensions: 2' diameter concrete pad

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
   a) Quantity used: 13 bags

7- Type of seal: Bentonite 3/8" chips
   a) Quantity used: 1 bag

8- Grout
   a) Grout mix used: Portland Cement, Bentonite grout
   b) Method of placement: Pour
   c) Vol. of well casing grout _____

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 55 gallons

Comments _____

PROJECT NUMBER	WELL NUMBER	
362248.FI.MW	YS08-GW07	SHEET 1 OF 1

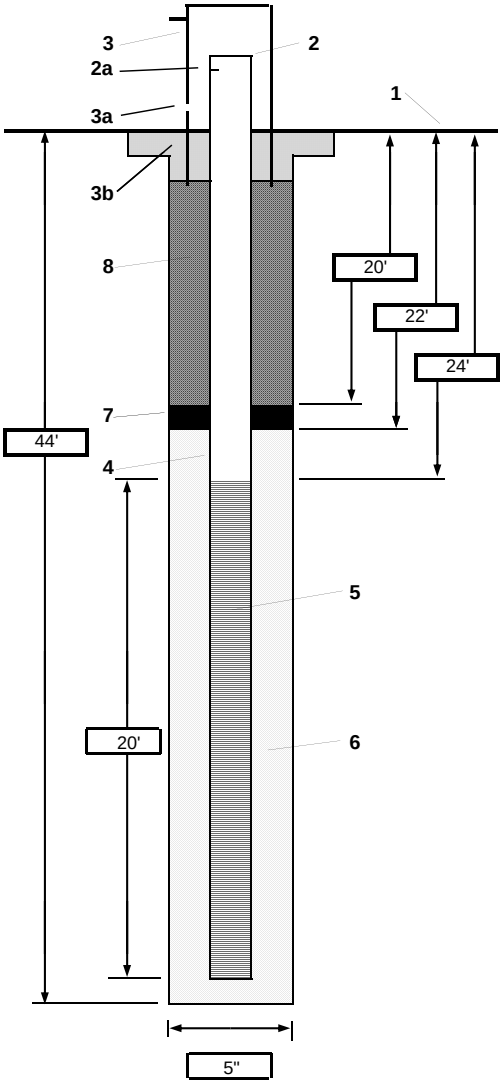
WELL COMPLETION DIAGRAM

PROJECT: CTO-195 NWS Yorktown RI Site 8 LOCATION: NWS Yorktown Site 8

DRILLING CONTRACTOR: Parratt Wolff, Inc. Northing: 3621366.71 Easting: 12044888.03

DRILLING METHOD AND EQUIPMENT USED : 4 1/4" Hollow Stem Augers on ATV rig

WATER LEVELS: 22' bgs START: 08/07/08 END:08/08/08 LOGGER: Pat Murphy



1- Ground elevation at well: 32.8

2- Top of casing elevation: 35.88
a) vent hole?

3- Wellhead protection cover type: 3' Stick Up
a) weep hole?
b) concrete pad dimensions: 2' diameter

4- Dia./type of well casing: 2" PVC
Schedule 40

5- Type/slot size of screen: 2" PVC 0.010-inch Slot
Schedule 40 PVC

6- Type screen filter: 1, Industrial Quartz #1 silica filter pack
a) Quantity used

7- Type of seal: 3/8" Bentontine Chips
a) Quantity used: 2 feet

8- Grout
a) Grout mix used: Concrete/Portland Cement
b) Method of placement: Tremie
c) Vol. of well casing grout

Development method: Submersible pump (whole)

Development time

Estimated purge volume: 55 gallons

Comments

PROJECT NUMBER	WELL NUMBER	
362248.FI.MW	YS08-GW08	SHEET 1 OF 1

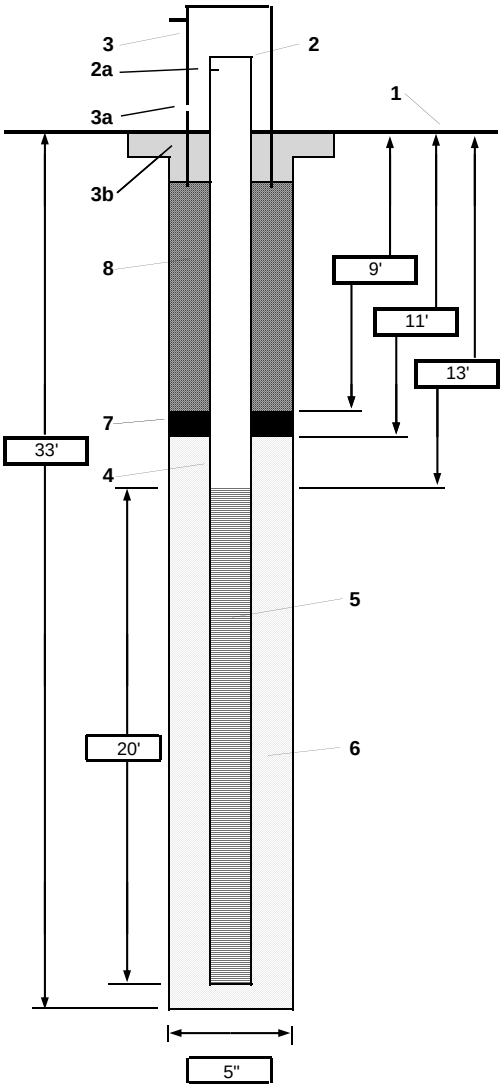
WELL COMPLETION DIAGRAM

PROJECT: CTO-195 NWS Yorktown RI Site 8 LOCATION: NWS Yorktown Site 8

DRILLING CONTRACTOR: Parratt Wolff, Inc. Northing: 3621161.31 Easting: 12044870.24

DRILLING METHOD AND EQUIPMENT USED : 4 1/4" Hollow Stem Augers on ATV rig

WATER LEVELS: 13' bgs START: 08/09/08 END:08/10/08 LOGGER: Mark Ost



1- Ground elevation at well: 15.3

2- Top of casing elevation: 18.07
a) vent hole?

3- Wellhead protection cover type: 3' Stick Up
a) weep hole?
b) concrete pad dimensions: 2' diameter

4- Dia./type of well casing: 2" PVC
Schedule 40

5- Type/slot size of screen: 2" PVC 0.010-inch Slot
Schedule 40 PVC

6- Type screen filter: 1, Industrial Quartz #1 silica filter pack
a) Quantity used

7- Type of seal: 3/8" Bentontine Chips
a) Quantity used: 2 feet

8- Grout
a) Grout mix used: Concrete/Portland Cement
b) Method of placement: Tremie
c) Vol. of well casing grout

Development method: Submersible pump (whole)

Development time

Estimated purge volume: 55 gallons

Comments

PROJECT NUMBER	WELL NUMBER	
362248.FI.MW	YS08-GW09	SHEET 1 OF 1

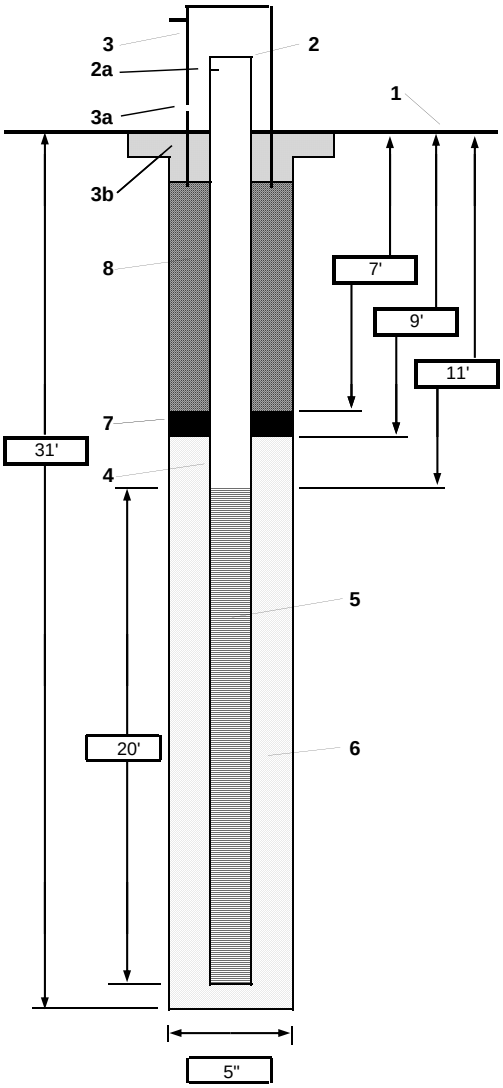
WELL COMPLETION DIAGRAM

PROJECT: CTO-195 NWS Yorktown RI Site 8 LOCATION: NWS Yorktown Site 8

DRILLING CONTRACTOR: Parratt Wolff, Inc. Northing: 3621200.66 Easting: 12044809.61

DRILLING METHOD AND EQUIPMENT USED : 4 1/4" Hollow Stem Augers on ATV rig

WATER LEVELS: 12' bgs START: 08/05/08 END:08/06/08 LOGGER: Pat Murphy



1- Ground elevation at well: 13.4

2- Top of casing elevation: 16.15
a) vent hole?

3- Wellhead protection cover type: 3' Stick Up
a) weep hole?
b) concrete pad dimensions: 2' diameter

4- Dia./type of well casing: 2" PVC
Schedule 40

5- Type/slot size of screen: 2" PVC 0.010-inch Slot
Schedule 40 PVC

6- Type screen filter: 1, Industrial Quartz #1 silica filter pack
a) Quantity used: 12 bags

7- Type of seal: 3/8" Bentontine Chips
a) Quantity used: 2 feet

8- Grout
a) Grout mix used: Concrete/Portland Cement
b) Method of placement: Tremie
c) Vol. of well casing grout

Development method: Submersible pump (whole)

Development time

Estimated purge volume: 55 gallons

Comments

PROJECT NUMBER	WELL NUMBER	
362248.FI.MW	YS08-GW09A	SHEET 1 OF 1

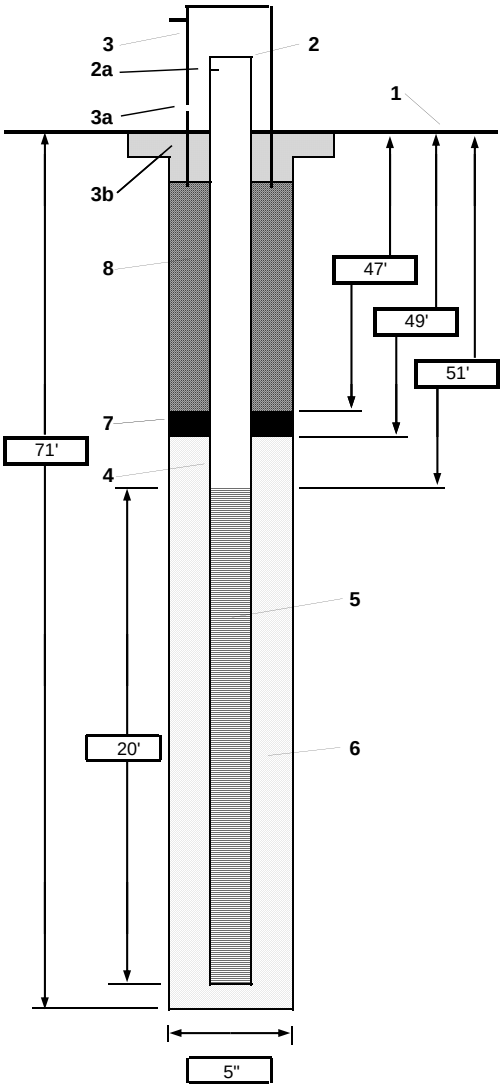
WELL COMPLETION DIAGRAM

PROJECT: CTO-195 NWS Yorktown RI Site 8 LOCATION: NWS Yorktown Site 8

DRILLING CONTRACTOR: Parratt Wolff, Inc. Northing: 3621201.52 Easting: 12044813.50

DRILLING METHOD AND EQUIPMENT USED : 4 1/4" Hollow Stem Augers on ATV rig

WATER LEVELS: 12' bgs START: 08/06/08 END:08/07/08 LOGGER: Pat Murphy



1- Ground elevation at well: 13.5

2- Top of casing elevation: 16.41
a) vent hole?

3- Wellhead protection cover type: 3' Stick Up
a) weep hole?
b) concrete pad dimensions: 2' diameter

4- Dia./type of well casing: 2" PVC
Schedule 40

5- Type/slot size of screen: 2" PVC 0.010-inch Slot
Schedule 40 PVC

6- Type screen filter: 1, Industrial Quartz #1 silica filter pack
a) Quantity used: 14 bags

7- Type of seal: 3/8" Bentontine Chips
a) Quantity used: 2 feet

8- Grout
a) Grout mix used: Concrete/Portland Cement
b) Method of placement: Tremie
c) Vol. of well casing grout

Development method: Submersible pump (whole)

Development time

Estimated purge volume: 55 gallons

Comments

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YSA14-GW05A	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 Site 34 Remedial Investigation — LOCATION : Yorktown NWS

ELEVATION : 19.83 ft amsl — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger

WATER LEVELS : 15.0 ft bgs — START : 10-12-07 — END : 10-13-07 — LOGGER : Lacy Salomone

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
	0-2'	24"		2-2-3-2 5		PID=0.0 ppm
5						
10						
15						
20						
25						
30						
35						
40						
45						
50						
55						

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YSA14-GW05A	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 Site 34 Remedial Investigation — LOCATION : Yorktown NWS

ELEVATION : 19.82 ft amsl — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger

WATER LEVELS : 15.0 ft bgs — START : 10-12-07 — END : 10-13-07 — LOGGER : David Livingston

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	4-6'	6"	1	3-4-7-5 11	silty CLAY (CL), w/ fine sand, yellowish brown 10YR5/6, dry, very dense, low plasticity	PID=0.0 ppm
10	9-11'	20"	2	7-3-4-4 7	silty CLAY (CL), w/ shell hash and trace gravel, light olive brown 2.5Y5/6, dry, medium density, medium plasticity	PID=0.0 ppm
15	14-16'	12"	3	4-4-6-6 10	Water table at 15' bgs **0-6**": clayed SILT (ML) w/ shell hash and some fine sand and gravel, light olive brown 2.5Y5/6, wet, mediu **6-12**": silty SAND (SM) w/ shell hash, gravel, and trace clay, light olive brown 2.5Y5/6, saturated, mediu	PID=0.0 ppm
20	19-21'	24"	4	5-9-12-15 21	**0-12**": clayed SILT (ML) w/ fine sand and shell hash, light olive brown 2.5Y5/6, saturated, low density **12-24**": silty SAND (SM) w/ shell hash, light yellowish brown 2.5Y6/4, saturated, medium density, no plastici	PID=0.0 ppm
25	24-26'	24"	5	4-6-9-13 15	**0-18**": fine SAND (SM) w/ some silt and shell hash, light olive brown 2.5Y5/6, saturated, medium density, **18-24**": fine SAND (SP) w/ trace shell hash, light olive brown 2.5Y5/6, saturated, medium density, no pl	PID=0.0 ppm
30	29-31'	24"	6	4-5-6-8 11	fine SAND (SP) w/ trace silt and shell hash, light olive brown 2.5Y5/6, saturated, medium density, no plasticity	PID=0.0 ppm
35	34-36'	24"	7	5-9-24-34 33	**0-18**": SAA **18-24**": fine SAND (SP) w/ some silt, greenish gray GLEY2 5/10BG, saturated, high density, no plasticity	PID=0.0 ppm
40	39-41'	24"	8	4-4-4-4 8	**0-18**": fine SAND (SP), light yellowish brown 2.5Y6/4, saturated, medium density, no plasticity **18-24**": SILT (ML) w/ some sand and clay, greenish gray GLEY1 5/5G, wet, medium density, slight plastici	PID=0.0 ppm
45	44-46'	24"	9	3-4-7-11 11	**0-6**" SAA **6-24**": silty fine SAND (SM), greenish gray GLEY1 5/5G, moist, med-high density, no plasticity	PID=0.0 ppm
50	49-51'	24"	10	4-4-4-6 8	silty fine SAND (SM), greenish gray GLEY1 5/5G, wet medium density, no plasticity	PID=0.0 ppm

Well Set 50' bgs: H20 Level= :

55

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YSA14-GW05	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 Site 34 Remedial Investigation — LOCATION : Yorktown NWS

ELEVATION : 19.82 ft amsl — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger

WATER LEVELS : 15.0 — START : 10-12-07 — END : 10-13-07 — LOGGER : David Livingston

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	4-6'	6"	1	3-4-7-5 11	silty CLAY (CL), w/ fine sand, yellowish brown 10YR5/6, dry, very dense, low plasticity	PID=0.0 ppm
10	9-11'	20"	2	7-3-4-4 7	silty CLAY (CL), w/ shell hash and trace gravel, light olive brown 2.5Y5/6, dry, medium density, medium plasticity	PID=0.0 ppm
15	14-16'	12"	3	4-4-6-6 10	Water table at 15' bgs **0-6**": clayed SILT (ML) w/ shell hash and some fine sand and gravel, light olive brown 2.5Y5/6, wet, mediu **6-12**": silty SAND (SM) w/ shell hash, gravel, and trace clay, light olive brown 2.5Y5/6, saturated, mediu	PID=0.0 ppm
20	19-21'	24"	4	5-9-12-15 21	**0-12**": clayed SILT (ML) w/ fine sand and shell hash, light olive brown 2.5Y5/6, saturated, low density **12-24**": silty SAND (SM) w/ shell hash, light yellowish brown 2.5Y6/4, saturated, medium density, no plastici	PID=0.0 ppm
25	24-26'	24"	5	4-6-9-13 15	**0-18**": fine SAND (SM) w/ some silt and shell hash, light olive brown 2.5Y5/6, saturated, medium density, **18-24**": fine SAND (SP) w/ trace shell hash, light olive brown 2.5Y5/6, saturated, medium density, no pl	PID=0.0 ppm
30	29-31'	24"	6	4-5-6-8 11	fine SAND (SP) w/ trace silt and shell hash, light olive brown 2.5Y5/6, saturated, medium density, no plasticity	PID=0.0 ppm

Well Set 30' bgs: H20 Level= :

35

40

45

50

55

PROJECT NUMBER	WELL NUMBER	
362248.FI.MW	A14GW05	SHEET 1 OF 1

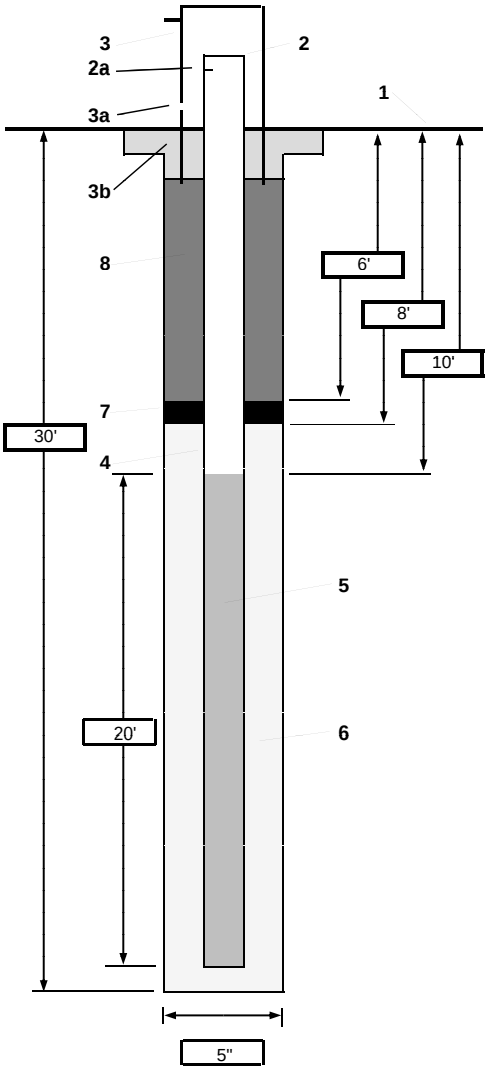
WELL COMPLETION DIAGRAM

PROJECT : RI - Sites 4, 8, 21, 22, 34, AOC 23 (CTO-195) LOCATION : NWS Yorktown - Site 34

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : START : 10/13/2007 END : 10/13/2007 LOGGER : D. Livingston



1- Ground elevation at well _____

2- Top of casing elevation _____
a) vent hole? _____

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards (2 shared with A14GW05A)
b) concrete pad dimensions: 3' x 3' concrete pad

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 12 bags

7- Type of seal: Bentonite 3/8" chips
a) Quantity used: 2 bags

8- Grout
a) Grout mix used: Portland Cement, Bentonite grout
b) Method of placement: Tremie Pipe
c) Vol. of well casing grout: 1.5 bags

Development method: Waterra Pump

Development time: 1 hour

Estimated purge volume: 55 gal.

Comments _____

PROJECT NUMBER	WELL NUMBER	
362248.FI.MW	A14GW05A	SHEET 1 OF 1

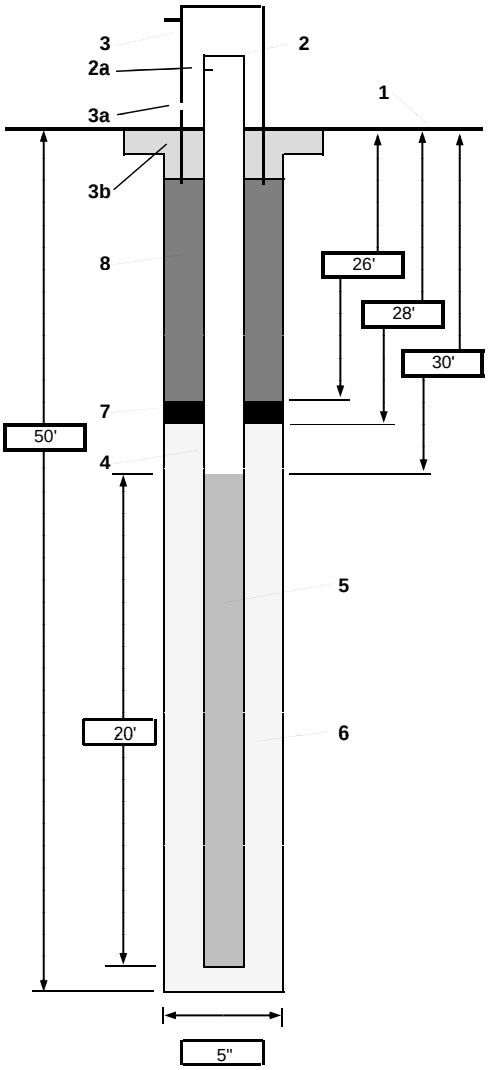
WELL COMPLETION DIAGRAM

PROJECT : RI - Sites 4, 8, 21, 22, 34, AOC 23 (CTO-195) LOCATION : NWS Yorktown - Site 34

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : START : 10/13/2007 END : 10/14/2007 LOGGER : D. Livingston



1- Ground elevation at well _____

2- Top of casing elevation _____
a) vent hole? _____

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards (2 shared with A14GW05)
b) concrete pad dimensions: 3' x 3' concrete pad

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 13 bags

7- Type of seal: Bentonite 3/8" chips
a) Quantity used: 1 bag

8- Grout
a) Grout mix used: Portland Cement, Bentonite grout
b) Method of placement: Tremie pipe
c) Vol. of well casing grout: 2 bags

Development method: Waterra Pump

Development time: 1 hour

Estimated purge volume: 55 gal.

Comments _____

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YS08-GW06	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 Site 08 Remedial Investigation — LOCATION : Yorktown NWS

ELEVATION : 17.54 — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger

WATER LEVELS : 10.23 ft bgs — START : 10-13-07 — END : 10-14-07 — LOGGER : Lacy Salomone

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
	0-2'	24"		2-2-3-2		PID=0.0 ppm
				5		
5						
10						
15						
20						
25						
30						
35						
40						
45						
50						
55						

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YS08-GW06	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 Site 08 Remedial Investigation — LOCATION : Yorktown NWS

ELEVATION : 17.54 — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger

WATER LEVELS : 11.0 — START : 10-13-07 — END : 10-14-07 — LOGGER : David Livingston

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5					hand auger to 5'	
	5-7'	12"	1	4-3-3-2 6	**0-6"**: silty CLAY (CL) w/ some gravel, mottled gray 2.5Y6/1 and light yellowish brown 2.5Y6/1, dry, medium **6-12"**: silty CLAY (CL), olive yellow 2.5Y6/8, dry, medium density, medium plasticity Water table at 11' bgs	PID=0.0 ppm
10	10-12'	24"	2	2-2-5-4 7	**0-6"**: silty CLAY (CL), mottled gray 2.5Y6/1 and light yel **6-12"**: sandy SILT (SM) w/ gravel and shell hash, pale y **12-24"**: sandy SILT (SM), w/ gravel and shell hash, pale	PID=0.0 ppm
15	15-17'	24"	3	2-2-3-3 5	SAA	PID=0.0 ppm
20	20-22'	24"	4	1-1-2-2 3	fine SAND (SP), pale olive 5Y6/4, saturated, low density, no plasticity, ~ 1/4 of sand is black.	PID=0.0 ppm
25	25-27'	24"	5	3-3-8-10 11	**0-6"**: SAA **6-24"**: fine SAND (SP) w/ shell hash, pale olive 5Y6/4, saturated, low-med density, no plasticity	
30	30-32'	24"	6	5-5-8-9 13	**0-12"**: SAA **12-24"**: fine SAND (SM) w/ silt and shell hash, dark greenish gray GLEY1 4/5G, saturated, medium density, no plasticity	
35						

Well Set 31' bgs: H20 Level= :

40 45 50 55

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YS08-GW06	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 Site 08 Remedial Investigation — LOCATION : Yorktown NWS

ELEVATION : 17.54 — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger

WATER LEVELS : 10.23 ft bgs — START : 10-13-07 — END : 10-14-07 — LOGGER : Lacy Salomone

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
	0-2'	24"		2-2-3-2		PID=0.0 ppm
				5		
5						
10						
15						
20						
25						
30						
35						
40						
45						
50						
55						

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YSA14-GW05A	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 Site SSA 14 Remedial Investigation — LOCATION : Yorktown NWS

ELEVATION : — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger

WATER LEVELS : 15.0 — START : 10-12-07 — END : 10-13-07 — LOGGER : David Livingston

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	4-6'	6"	1	3-4-7-5 11	silty CLAY (CL), w/ fine sand, yellowish brown 10YR5/6, dry, very dense, low plasticity	PID=0.0 ppm
10	9-11'	20"	2	7-3-4-4 7	silty CLAY (CL), w/ shell hash and trace gravel, light olive brown 2.5Y5/6, dry, medium density, medium plasticity	PID=0.0 ppm
15	14-16'	12"	3	4-4-6-6 10	Water table at 15' bgs **0-6**": clayed SILT (ML) w/ shell hash and some fine sand and gravel, light olive brown 2.5Y5/6, wet, medium **6-12**": silty SAND (SM) w/ shell hash, gravel, and trace clay, light olive brown 2.5Y5/6, saturated, medium	PID=0.0 ppm
20	19-21'	24"	4	5-9-12-15 21	**0-12**": clayed SILT (ML) w/ fine sand and shell hash, light olive brown 2.5Y5/6, saturated, low density, **12-24**": silty SAND (SM) w/ shell hash, light yellowish brown 2.5Y6/4, saturated, medium density, no plasticity	PID=0.0 ppm
25	24-26'	24"	5	4-6-9-13 15	**0-18**": fine SAND (SM) w/ some silt and shell hash, light olive brown 2.5Y5/6, saturated, medium density, lo **18-24**": fine SAND (SP) w/ trace shell hash, light olive brown 2.5Y5/6, saturated, medium density, no plas	PID=0.0 ppm
30	29-31'	24"	6	4-5-6-8 11	fine SAND (SP) w/ trace silt and shell hash, light olive brown 2.5Y5/6, saturated, medium density, no plasticity	PID=0.0 ppm
35	34-36'	24"	7	5-9-24-34 33	**0-18**": SAA **18-24**": fine SAND (SP) w/ some silt, greenish gray GLEY2 5/10BG, saturated, high density, no plasticity	PID=0.0 ppm
40	39-41'	24"	8	4-4-4-4 8	**0-18**": fine SAND (SP), light yellowish brown 2.5Y6/4, saturated, medium density, no plasticity **18-24**": SILT (ML) w/ some sand and clay, greenish gray GLEY1 5/5G, wet, medium density, slight plasticity	PID=0.0 ppm
45	44-46'	24"	9	3-4-7-11 11	**0-6**" SAA **6-24**": silty fine SAND (SM), greenish gray GLEY1 5/5G, moist, med-high density, no plasticity	PID=0.0 ppm
50	49-51'	24"	10	4-4-4-6 8	silty fine SAND (SM), greenish gray GLEY1 5/5G, wet, medium density, no plasticity	PID=0.0 ppm

Well Set 50' bgs: H20 Level= :

55

PROJECT NUMBER	BORING NUMBER	
362248.FI.MW	YSA14-GW05	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-195 Site SSA 14 Remedial Investigation — LOCATION : Yorktown NWS

ELEVATION : — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger

WATER LEVELS : 15.0 — START : 10-12-07 — END : 10-13-07 — LOGGER : David Livingston

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	4-6'	6"	1	3-4-7-5 11	silty CLAY (CL), w/ fine sand, yellowish brown 10YR5/6, dry, very dense, low plasticity	PID=0.0 ppm
10	9-11'	20"	2	7-3-4-4 7	silty CLAY (CL), w/ shell hash and trace gravel, light olive brown 2.5Y5/6, dry, medium density, medium plasticity	PID=0.0 ppm
15	14-16'	12"	3	4-4-6-6 10	Water table at 15' bgs **0-6**": clayed SILT (ML) w/ shell hash and some fine sand and gravel, light olive brown 2.5Y5/6, wet, medium **6-12**": silty SAND (SM) w/ shell hash, gravel, and trace clay, light olive brown 2.5Y5/6, saturated, medium	PID=0.0 ppm
20	19-21'	24"	4	5-9-12-15 21	**0-12**": clayed SILT (ML) w/ fine sand and shell hash, light olive brown 2.5Y5/6, saturated, low density, **12-24**": silty SAND (SM) w/ shell hash, light yellowish brown 2.5Y6/4, saturated, medium density, no plasticity	PID=0.0 ppm
25	24-26'	24"	5	4-6-9-13 15	**0-18**": fine SAND (SM) w/ some silt and shell hash, light olive brown 2.5Y5/6, saturated, medium density, lo **18-24**": fine SAND (SP) w/ trace shell hash, light olive brown 2.5Y5/6, saturated, medium density, no plas	PID=0.0 ppm
30	29-31'	24"	6	4-5-6-8 11	fine SAND (SP) w/ trace silt and shell hash, light olive brown 2.5Y5/6, saturated, medium density, no plasticity	PID=0.0 ppm

Well Set 30' bgs: H20 Level= :

PROJECT NUMBER	WELL NUMBER	
362248.FI.MW	08GW06	SHEET 1 OF 1

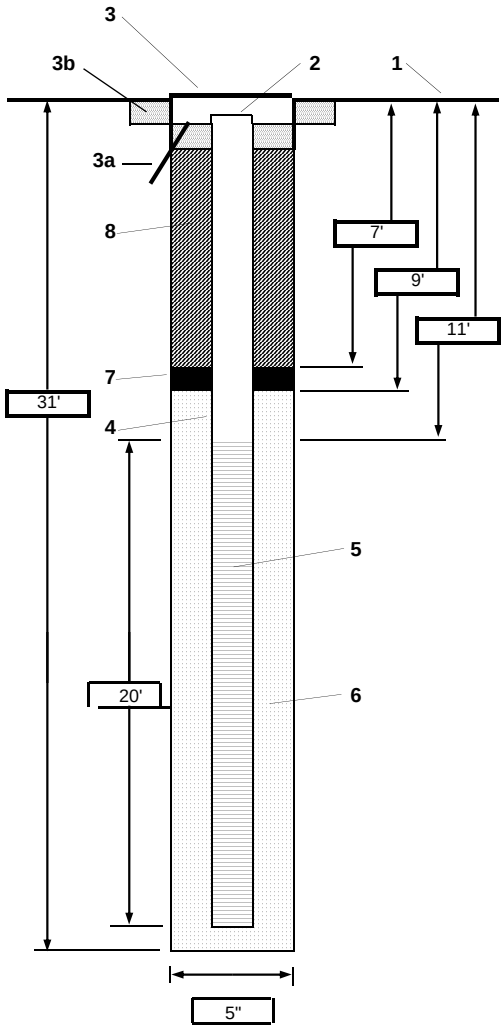
WELL COMPLETION DIAGRAM

PROJECT : RI - Sites 4, 8, 21, 22, 34, AOC 23 (CTO-195) LOCATION : NWS Yorktown Site 8

DRILLING CONTRACTOR : Parrott Wolff NORTHING: 36212 EASTING: 12045055.61

DRILLING METHOD AND EQUIPMENT USED : 4.25" Hollow Stem Auger

WATER LEVELS : 10.23' bgs START : 10/13/07 END : 10/14/07 LOGGER : D. Livingston



1- Ground elevation at well

2- Top of casing elevation

3- Wellhead protection cover type: 2' diameter concrete pad
a) Bollards
b) concrete pad dimensions: 2' diameter concrete pad

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 13 bags

7- Type of seal: Bentonite 3/8" chips
a) Quantity used: 1 bag

8- Grout
a) Grout mix used: Portland Cement, Bentonite grout
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 55 gallons

Comments

Appendix B
Survey Reports

Monitoring Well	Northing (Y)	Easting (X)	Elevation Top of Pipe	Ground Elevation	
4GW07	3622325.50	12044175.86	33.50	30.5	
4GW07A	3622325.51	12044172.09	33.71	30.2	Site 4
4GW08	3622474.89	12044320.22	32.03	28.9	
4GW08A	3622478.28	12044322.53	32.32	29.1	
4GW09	3622687.86	12044404.49	44.10	40.9	
4GW09A	3622690.43	12044400.08	44.02	40.9	

Monitoring Well	Northing (Y)	Easting (X)	Elevation Top of Pipe	Ground Elevation	Site 8
8GW06	3621234.92	12045055.61	17.54	17.90 (PV)	

Monitoring Well	Northing (Y)	Easting (X)	Elevation Top of Pipe	Ground Elevation	
21GW05	3622220.24	12044492.83	36.41	33.5	Site 21
21GW06	3622292.91	12044486.55	38.44	35.4	
21GW07	3622212.85	12044559.05	37.50	34.3	

Monitoring Well	Northing (Y)	Easting (X)	Elevation Top of Pipe	Ground Elevation	
22GW06	3622078.28	12043998.28	28.98	25.7	
22GW07	3622105.41	12043793.80	27.30	24.0	Site 22
22GW08	3622166.99	12043685.87	26.17	23.1	
22GW09	3621887.89	12043711.73	19.27	16.3	
22GW10	3621798.78	12043901.84	11.50	9.0	
22GW11	3622269.90	12043897.88	32.20	28.9	

Monitoring Well	Northing (Y)	Easting (X)	Elevation Top of Pipe	Ground Elevation	
A14GW05	3620734.65	12045181.70	19.82	17.1	Site 34
A14GW05A	3620737.00	12045187.65	19.79	17.1	

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Monitoring Well	Northing (Y)	Easting (X)	Elevation Top of Pipe	Ground Elevation	
12GW21	3613299.96	12052008.03	81.15	81.41 (PV)	
12GW22	3616371.02	12052338.11	80.40	80.70 (PV)	
12GW23	3616929.48	12052423.98	78.57	75.1	Site
12GW24	3616024.74	12052294.94	77.60	77.87 (PV)	AOC 23
12GW25	3617371.06	12052874.41	69.52	69.72 (PV)	
12GW26	3616928.96	12051966.73	72.42	69.5	
12GW27	3616772.34	12051530.19	78.08	78.46 (PV)	

(PV) = SHOT TAKEN NEXT TO WELL ON PAVEMENT

Horizontal information based on Virginia State Plane Coordinate System
South Zone (NAD 83)

Vertical information based on NAVD 88

Shots taken on well were marked with permanent black marker.

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Monitoring Well	Northing (Y)	Easting (X)	Elevation Top of Pipe	Ground Elevation
8GW07	3621366.71	12044888.03	35.88	32.8
GW08	3621161.31	12044870.24	18.07	15.3
GW09	3621200.66	12044809.61	16.15	13.4
GW09A	3621201.52	12044813.50	16.41	13.5

Site 8

Horizontal information based on Virginia State Plane Coordinate System
South Zone (NAD 83)

Vertical information based on NAVD 88

Shots taken on well were marked with permanent black marker.

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Location: NWS Yorktown Date: 11/1/07

Project / Client: AI CTO 195

Site 4, 8, 21, 22, SSA14 AOC 23

0907 Arrived at Site 4

Personnel: M. Ost CH2M

D Livingston CH2M

Weather: Cool, Clr, 65°F

Obj: Collect Samples

0909 Hold Safety Brief on Ticks

0910 Mob to 04 GW 09A

DTW: 30.10' DTB: 96.' Volume: 10.6 Gal

0911 Commenced Purge

Time	Ph	mS/cm Cond	NTU Turb	mg/L DO	C° Temp	% Sal	mv orp	ft DTW	ml/m Flo
0915	6.18	0.429	-5.0	9.26	16.67	0.02	128	30.15'	300
0920	6.80	0.434	-5.0	3.48	16.80	0.02	84	34.63'	300
0925	7.00	0.439	-5.0	3.39	16.90	0.02	69	34.63'	300
0930	7.16	0.444	-5.0	3.33	16.98	0.02	56	34.63'	300
0935	7.28	0.438	-5.0	3.31	17.08	0.02	46	34.63'	300
0940	7.36	0.431	-5.0	3.31	17.27	0.02	39	34.63'	300
0945	7.44	0.423	-5.0	3.29	17.44	0.02	32	34.63'	300
0950	7.48	0.417	-5.0	3.33	17.47	0.02	27	34.63'	300
0955	7.54	0.410	-5.0	3.27	18.05	0.02	16	34.63'	300
1000	7.56	0.407	-5.0	3.24	17.92	0.02	13	34.63'	300
1005	7.59	0.407	-5.0	3.27	17.85	0.02	7	34.63'	300
1010	7.60	0.413	-5.0	3.30	17.89	0.02	4	34.63'	300
1015	7.62	0.405	-5.0	3.25	17.73	0.02	-1	34.66'	300
1020	7.63	0.394	-5.0	3.22	17.65	0.02	-6	34.66'	300

Location: NWS Yorktown Date: 11/1/07

Project / Client: AI CTO 195

Site 4, 8, 21, 22, SSA14, AOC 23

Time	Ph	mS/cm Cond	NTU Turb	mg/L DO	C° Temp	% Sal	mv orp	DTW	Flow
1025	7.64	0.387	-5	3.22	17.70	0.02	-8	34.66'	300
1030	7.65	0.385	-5	3.24	17.54	0.02	-10	34.66'	300
1035	7.66	0.393	-5	3.23	17.50	0.02	-14	34.66'	300
1040	7.66	0.395	-5	3.18	17.59	0.02	-17	34.66'	300
1045	7.67	0.384	-5	3.15	17.77	0.02	-20	34.63'	300
1050	7.68	0.375	-5	4.71	17.95	0.02	26	34.63	300
1055	7.69	0.377	-5	4.36	17.98	0.02	22	34.63'	300
1100	7.69	0.377	-5	4.05	18.08	0.02	15	34.67'	300
1105	7.69	0.375	852	3.86	18.23	0.02	11	34.63	300
1110	7.69	0.375	815	3.85	18.18	0.02	10	34.63	300
1115	7.69	0.376	700	3.66	18.32	0.02	3	34.63	300
1120	7.70	0.377	619	3.61	18.22	0.02	-2	34.63	300
1125	7.70	0.377	564	3.48	18.22	0.02	-8	34.63	300
1130	7.70	0.376	485	3.41	18.43	0.02	-14	34.63	300
1135	7.70	0.375	498	3.36	18.40	0.02	-17	34.63	300
1140	7.71	0.375	491	3.31	18.52	0.02	-20	34.63	300
1145	7.71	0.374	458	3.26	18.74	0.02	-22	34.67	300

1215 Collect Y504-GW09A-1101 14 Gallons Purged

for VOC SVOC Pest Metals Dmetals, Explosives

PETN, 3,5 DNA, Nitroglycerin, Nitroguanidine

DO By Chemets 1.0 mg/L

1232 Mob to GW09 Site 4 30.73' DTW

DTB 53.00' Volume: 3.6 Gallons

Location: NWS Yorktown Date: 11/1/07

Project / Client: RI CTO 195

Site 4, 8, 21, 22, SSA14 AOC 23

1235 Commenced Purge 04GW09

Time	Ph	mS/cm Cond	NTU Turb	mg/L DO	C° Temp	% Sal	mv orp	DTW	Flow
1240	7.62	0.279	-5	3.39	18.43	0.01	-1	32.7'	250
1245	7.58	0.376	-5	3.35	18.80	0.02	-11	32.7'	250
1250	7.57	0.439	-5	3.27	18.67	0.02	-40	32.7'	250
1255	7.55	0.354	-5	3.09	18.96	0.01	-56	33.7'	250
1300	7.56	0.381	-5	3.16	17.95	0.01	-65	33.7'	250
1305	7.56	0.356	-5	3.15	18.04	0.01	-67	33.7'	250
1310	7.58	0.311	-5	3.11	18.16	0.01	-74	34.6'	250
1315	7.59	0.301	-5	3.10	18.06	0.01	-78	34.2'	250
1320	7.60	0.301	-5	3.11	17.95	0.01	-81	34.2'	250
1325	7.60	0.306	-5	3.09	18.07	0.01	-81	34.2'	250
1330	7.61	0.291	-5	3.08	18.02	0.01	-85	34.2'	250
1335	7.61	0.295	-5	3.07	17.85	0.01	-87	34.2'	250
1340	7.62	0.289	-5	3.05	17.74	0.01	-94	34.2	250
1345	7.62	0.291	-5	3.09	17.78	0.01	-93	34.2'	250
1350	7.63	0.286	-5	3.04	17.74	0.01	-101	34.2'	250
1355	7.63	0.277	-5	3.04	17.72	0.01	-103	34.2'	250
1400	7.64	0.278	-5	3.00	17.72	0.01	-108	34.2	250
1405	7.64	0.278	-5	3.01	17.74	0.01	-108	34.2	250

1410 Collect [Y504-GW09-1101] 13 Gallons purged. Sampled Per PI

1501 Mob to 04GW01

DTW: 16.71' DTB: 25' Volume: 1.5 Gallons

Location: NWS Yorktown Date: 11/01/07

Project / Client: RI CTO 195

Site 4 & 21 22 SSA14 AOC 23

1510 Commenced Purge GW01

Time	Ph	mS/cm Cond	NTU Turb	mg/L DO	C° Temp	% Sal	mv orp	DTW	Flow
1515	6.49	0.544	-5	4.01	18.26	0.02	1	16.90'	250
1520	6.47	0.587	-5	4.01	18.29	0.02	1	20.1'	100
1525	6.41	0.599	-5	3.94	18.40	0.03	-38	20.1'	190
1530	6.36	0.655	-5	3.60	18.77	0.03	-40	20.1'	200
1535	6.33	0.986	-5	3.22	20.09	0.02	-40	20.1'	200
1540	6.34	0.633	-5	2.95	19.89	0.03	-28	20.1'	200
1545	6.34	0.666	-5	2.95	20.05	0.03	-26	20.1'	200
1550	6.34	0.759	-5	2.95	20.72	0.03	-20	21.9'	100
1555	6.36	0.613	-5	2.98	20.60	0.03	-12	21.9'	100
1600	6.38	0.608	-5	3.39	21.30	0.03	-10	23.2'	75
1605	6.40	0.582	-5	3.41	21.55	0.02	-8	23.4'	75

1610 Well Run Dry. Secured Purge to Recharge Well

1710 Recommenced Purge

1714	6.92	0.585	-5	7.90	18.62	0.02	65	21.3'	100

1712 Secure Purge Well Dry 2 Gallons Purged

1720 offsite

11/01/07

Location: NWS Yorktown Date: 11/02/07

Project / Client: RI CTO 195

Site 4, 8, 21, 22, SSA14, AOC 27

1121 Arrived Onsite

Personnel: ML OST

D Livingston

Weather: Clr 65 Winny

obj: Continue Sampling Site 4

1125 Conduct Safety Brief

1130 Calibrate Horiba # Cla898

Cal Soln Lot #: ? SZZ Exp: 12/08/10

Ph: 3.99 Cond: 4.49 Turb: 0.0

1133 Recommenced Purge GW01 Site 4

17.1' DTW

Time	Ph	Cond (mS/cm)	Turb (NTU)	DO (mg/L)	Temp (C°)	Sal (%)	orp (mV)	DTW	Flow
1135	5.41	0.619	-5	6.73	16.60	0.03	135	17.9'	100
1140	5.79	0.618	-5	5.06	16.56	0.03	113	17.9'	100

1145 Collect [Y504-GW01-1107] As Per PI. DO By Chemets: 1.0 mg/L

1200 Mob to GW01A DTW: 31.0' DTB: ~~33.8~~ 54'

Volume: 3.4 gallons

1205 Commenced Purge GW01A

Time	Ph	Cond (mS/cm)	Turb (NTU)	DO (mg/L)	Temp (C°)	Sal (%)	orp (mV)	DTW	Flow
1210	9.81	0.270	250	6.55	15.84	0.01	76	-	200
1215	9.41	0.279	310	4.58	16.25	0.01	60	-	200
1220	9.09	0.290	701	3.89	16.56	0.01	36	-	200
1225	8.88	0.304	-5	3.71	16.70	0.01	8	-	200

Location: NWS Yorktown Date: 11/02/07

Project / Client: RI CTO 195

Site 4, 8, 21, 22, SSA14, AOC 23

Time	Ph	Cond	Turb	DO	Temp	Sal	orp	DTW	Flow
1230	8.88	0.304	-5	3.70	16.40	0.01	-19	-	190
1235	8.57	0.314	898	6.28	16.32	0.01	-19	-	190
1240	8.38	0.336	622	3.59	16.91	0.01	-81	-	190
1245	8.44	0.318	389	3.74	16.82	0.01	-100	-	190
1250	8.22	0.337	242	3.36	16.88	0.01	-165	-	190
1255	8.32	0.319	237	3.94	16.88	0.01	-153	-	190
1300	8.44	0.312	234	4.13	16.77	0.01	-134	-	190
1305	8.42	0.316	214	3.87	16.58	0.01	-142	-	190

1315 Collect [Y504-GW01A-1107] Per PI

Raw mS/mS D DO by Chemets: 1.0 mg/L

1431 Demob GW01A

1432 Mob to GW08 Site 4

1439 Commenced Purge GW08 DTB: 43.0' DTW: 21.0' Vol: 3.59

Time	Ph	Cond	Turb	DO	Temp	Sal	orp	DTW	Flow
1450	6.99	0.594	-5	3.37	16.13	0.03	-88	-	300
1455	6.95	0.681	-5	3.30	16.23	0.03	-88	-	300
1500	6.91	0.612	-5	3.41	16.18	0.03	-79	-	300
1505	6.75	0.650	-5	3.26	16.12	0.03	-61	-	300
1510	6.59	0.804	622	3.21	16.06	0.04	-56	-	300
1515	6.54	0.838	547	3.18	16.0	0.03	-48	-	300
1520	6.52	0.808	445.0	3.18	16.19	0.03	-46	-	300
1525	6.49	0.765	316.0	3.17	16.05	0.03	-41	-	300
1530	6.47	0.780	235	3.16	16.12	0.03	-41	-	300

Location: NWS Yorktown Date: 11/02/07

Project / Client: RI CTO 195

Site 4, 8, 21, 22, SSA14, AOC 23

1545 Collect [YS04-GW05-1107] as per P.I. 10 gallons Purged.

Do By Chemists: 0.8 mg/L

1555 Demob GW05 Site 4

1605 Collect [YS04-FB01-110207]

1610 Collect [YS04-EB01-1102.07]

1718 offsite to Ship Samples.

No further Entries

Location: NWS Yorktown Date: 11/5/07

Project / Client: RI CTO 195

Site 4, 8, 21, 22, SSA 14, AOC 23

0800 Arrived onsite

Personnel: ML OST CHZM

D Livingston CHZM

0801 Conducted Safety Brief

0802 Calibrate Horiba #C101898

CAL Soln Lot SS2 Exp. 12/08/07

Ph: 3.99 Cond: 9.99 NTU: 0.0

Meter Reads Error 5 and 7 Cond probe may be faulty.

0803 Mob to GW08A DTW: 20.5' DTB: 92' Volume: 11.6 gallons, Cleaned Probe Cond: 4.50

0846 Commenced Purge GW08A

Time	Ph	mS/cm Cond	NTU Turb	mg/L DO	°C Temp	% SAL	mv ORP	DTW	Flo
0850	6.07	0.459	338.0	5.14	15.03	0.02	20	21.9'	250
0855	6.29	0.002	679	10.16	15.68	0.00	93	22.0	250
0900	7.13	0.462	-5	4.07	15.83	0.02	-77	22.0'	250
0905	7.39	0.438	-5	3.77	15.81	0.02	-100	22.1'	290
0910	7.69	0.410	116	3.60	15.78	0.02	-134	23	250
0915	7.72	0.399	408	3.54	15.89	0.02	-138	24.0	250
0920	7.74	0.396	269	3.56	15.88	0.02	-139	24.0	250
0925	7.74	0.396	155	3.74	15.86	0.02	-139	24.0	250
0930	7.78	0.390	128	3.75	15.93	0.02	-142	24.5	250
0935	7.80	0.394	15.3	3.58	15.89	0.02	-144	25	250
0940	7.82	0.382	0.0	3.52	15.87	0.02	-145	25	250

Location: NWS Yorktown Date: 11/5/07

Project / Client: RI CTO 195

Site 2, 21, 22, 12, SSA14 AOC 23

0945 Collect [Y504-GW08A-1107] As per PI Do by Chemets: 1.0 mg/L

0950 Collect [Y504-GW08AP-1107] As per PI 12.0 Gallons Purged

1033 Demob GW08A

1039 Mob to GW06A DTW: 27.55' DTB: 67.69'

Volume: 6 Gallons

1057 Commenced Purge GW06A

Time	PH	Cond (mS/cm)	Turb (NTU)	DO (mg/L)	Temp (C°)	Sal (%)	orp (mv)	DTW	Flow
1100	7.27	0.549	-5	3.96	17.00	0.02	-3	28.1'	250
1105	7.26	0.563	-5	3.98	17.07	0.02	2	28.1'	250
1110	7.25	0.564	-5	3.91	17.10	0.02	-20	28.1'	217
1115	7.24	0.561	930	3.82	17.19	0.02	-56	28.1'	250
1120	7.25	0.563	711	3.82	17.25	0.02	-70	28.1'	250
1125	7.26	0.588	618	3.70	17.23	0.02	-94	29.5'	250
1130	7.28	0.572	420	3.67	17.20	0.02	-106	29.9'	250
1135	7.29	0.561	396	3.66	17.16	0.02	-114	30'	250
1140	7.29	0.530	206	3.99	17.21	0.02	-105	30'	250
1145	7.30	0.534	63.8	3.66	17.35	0.02	-111	30'	250
1150	7.30	0.541	20.1	3.65	17.25	0.02	-119	30'	250

1155 Collect [Y504-GW06A-1107] As per PI Do By Chemets: 0.8 mg/L

1211 Demob GW06A 11 Gal. Purged.

1215 Mob GW06

Location: NWS Yorktown Date: 11/05/07

Project / Client: RI CTO 195

Site 2, 21, 22, 12, SSA14 AOC 23

DTW: 27.70' DTB: 40.0' Volume: 4.0 Gal

1308 Commenced Purge GW06

Time	Ph	Cond (mS/cm)	Turb (NTU)	DO (mg/L)	Temp (C°)	Sal (%)	orp (mv)	DTW	Flow
1310	6.43	0.92	-5	4.64	17.73	0.04	87	28	350
1315	6.27	0.92	-5	3.62	17.53	0.04	90	28	350
1320	6.18	0.92	-5	3.59	17.78	0.04	92	29	350
1325	6.37	0.98	830	3.32	17.50	0.04	76	29	350
1330	6.48	0.98	578	3.19	17.37	0.04	68	30	350
1335	6.53	1.01	669	3.39	17.84	0.04	43	31	350
1340	6.58	1.05	423	3.12	18.24	0.05	41	31	350
1345	6.55	1.07	336	3.10	18.05	0.05	36	32	350
1350	6.57	1.03	256	3.15	17.93	0.05	40	33	350
1355	6.57	1.06	227	3.14	17.78	0.05	41	33	350

1400 Collect [Y504-GW06-1107]

Do by Chemets: 1.0 mg/L

8.5 Gallons Purged

1430 Collect [Y504-EB110507] As per PI

1439 Demob GW06

1440 Mob to GW03 DTW: 21.6' DTB: 30.0'

Volume: 23 Gallons

1450 Commenced Purge GW03

Time	Ph	Cond (mS/cm)	Turb (NTU)	DO (mg/L)	Temp (C°)	Sal (%)	orp (mv)	DTW	Flow
1455	6.77	0.995	-5	3.8	16.4	0.04	185	22	175
1500	6.75	0.981	-5	3.61	16.67	0.04	171	23	175

Location: NWS Yorktown Date: 11/5/07

Project / Client: RI CTO 195

Site 2, 21, 22, 32, SSA14, ADC 23

Time	Ph	Cond (ms/cm)	Turb (NTU)	DO (mg/L)	Temp (C°)	Sal (%)	orp (mV)	DTW	Flow
1505	6.77	0.974	-5	3.48	16.8	0.04	159	22'	130
1510	6.78	0.970	906	3.47	16.8	0.04	155	22'	130
1515	6.80	0.956	552	6.45	16.5	0.04	145	22'	130
1520	6.78	0.948	438	3.91	17.3	0.04	133	22	130
1525	6.80	0.943	320	3.47	17.2	0.04	113	22'	130
1530	6.81	0.942	301	3.50	16.73	0.04	107	22'	130
1535	6.81	0.948	343	3.42	16.6	0.04	106	22'	130

1545 Collect [Y504-GW03-1107] per PI

DO By Chemets; 0.8 mg/L

5 Gallons Purged

1605 - Depart base to ship samples

Location: NWS Yorktown Date: 11/6/07

Project / Client: RI (CTO 195)

0800 - Arrive on site

Field team: D. Livingston, P. Murphy > CH2M
J. Robertson, P. Philips > PW

Weather: cool, rainy, 56°F

Obj: Sample monitoring wells at site 4 and install pads at previously constructed wells

0815 - P. Murphy conducts H&S meeting (traffic safety, weather)

0825 - Calibrate Horiba U-22*

with	Cal solution	Lot #	Exp.
pH:	3.97	Cond:	4.50 mS/cm
Turb:	Error 5	DO:	10.51 mg/L

Note: Turbidity will be recorded, but may not be accurate → other parameters will be used to ensure groundwater is being sampled

0848 - set up at monitoring well for groundwater sampling at 04GW07

DTW: 21.3' PTB: 26'

1 well volume = 0.9 gallons

0855 - Begin purging 04GW07

Location: NWS Yorktown Date: 11/6/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

04GW07

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow ml/min
0900	6.29	0.469	435	5.40	14.88	0.02	83	22.23	400
0905	6.52	0.493	618	4.47	15.72	0.02	48	22.84	300
0910	6.80	0.535	324	4.42	15.01	0.02	49	23.51	300
0915	6.92	0.481	202	4.26	15.77	0.02	27	2	400
0920	7.03	0.534	124	5.23	15.15	0.02	54	24.82	400
0925	7.04	0.533	46.8	5.15	15.29	0.02	53	25.6	400
0930	7.04	0.541	42.6	5.17	15.17	0.02	56	25.95	400

DO: 1.0 mg/L (chemets) ~ 3.5 gallons purged

0935 - Collect sample [Y504-GW07-1107] for VOCs, SVOCs, Pest, PCB, Total Metals, Dis Metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine

0940 - Collect sample [Y504-GW07P-1107] for VOCs, SVOCs, Pest, PCB, Total Metals, Dis Metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine

1100. Pack up at location, set up at monitoring well 04GW07A for groundwater sampling

DTW: 28.05' btoc

DTB: 102' btoc

1 well volume: 12.9 gallons

1115 - Begin purging 04GW07A

Location: NWS Yorktown Date: 11/6/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

04GW07A

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow ml/min
1120	7.90	0.790	>999	5.76	13.17	0.03	-109	24.04	450
1125	7.87	0.536	>999	4.02	13.55	0.02	-108	25.15	450
1130	7.88	0.536	>999	3.96	12.95	0.02	-109	26.08	450
1135	7.88	0.538	>999	3.82	12.99	0.02	-111	26.98	400
1140	7.89	0.531	>999	3.76	12.85	0.02	-114	27.05	400
1145	7.88	0.528	>999	3.63	13.39	0.02	-118	26.25	350
1150	7.88	0.524	>999	3.56	13.62	0.02	-120	27.01	350
1155	7.90	0.524	971	3.62	13.18	0.02	-122	27.22	350
1200	7.91	0.517	907	3.57	13.41	0.02	-122	27.30	350
1205	7.92	0.517	735	3.63	12.96	0.02	-122	27.33	350
1210	7.92	0.498	653	3.64	13.02	0.02	-122	27.52	350
1215	7.92	0.499	462	3.67	12.75	0.02	-126	27.60	350
1220	7.92	0.493	422	3.64	12.85	0.02	-127	27.65	350
1225	7.91	0.486	685	3.50	13.86	0.02	-127	27.52	350
1230	7.92	0.491	683	3.55	13.44	0.02	-128	27.20	300
1235	7.92	0.482	538	3.50	13.85	0.02	-126	27.38	300
1240	7.94	0.485	528	3.58	13.41	0.02	-123	26.38	300
1245	7.94	0.471	564	3.50	13.98	0.02	-124	26.88	300
1250	7.95	0.477	507	3.55	13.61	0.02	-124	27.18	300
1255	7.93	0.473	461	3.50	14.02	0.02	-125	27.28	300
1300	7.94	0.470	414	3.46	14.23	0.02	-130	27.38	300

Location: NWS Yorktown Date: 11/6/07

Project / Client: RI CTO-195

Sites 4, 8, 21, 22, SSA 14, AOC 23

046W07A cont

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow
1305	7.95	0.468	356	3.50	13.90	0.02	-130	27.90	350
1310	7.95	0.467	317	3.47	14.07	0.02	-131	27.91	350
1315	7.95	0.465	249	3.48	13.95	0.02	-132	27.92	350
1320	7.94	0.462	191	3.41	14.31	0.02	-134	28.15	350
1325	7.95	0.459	153	3.44	14.14	0.02	-135	28.40	350
1330	7.96	0.457	109	3.44	14.25	0.02	-136	28.41	350
1335	7.96	0.454	93	3.40	14.34	0.02	-136	28.40	350
1340	7.96	0.455	79.3	3.45	14.06	0.02	-137	28.41	350
1345	7.96	0.453	64.5	3.46	14.07	0.02	-137	28.43	350
1350	7.96	0.451	21.4	3.37	14.38	0.02	-138	28.42	350
1355	7.96	0.450	13.6	3.36	14.54	0.02	-140	28.42	350
1400	7.96	0.448	28.3	3.40	14.57	0.02	-141	28.44	350

DO: 0.8 mg/L (Chemets) ~ 13 gallons purged

1405 - Collect sample YS04-GW07A-1107 for VOCs, SVOCs, Pest, PCB, Tot Metals, Dis Metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine, CNNS, Alkalinity, TOC, Sulfide, MEE RSK 175, Dehalococcoides

1430 - Pack up at location

JC

Location: NWS Yorktown Date: 11/6/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

1435 - Collect equipment blank YS04-EB01-110607 for VOCs, SVOCs, Pest, PCB, Tot Metals, Dis. Metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine

1445 - Collect field blank YS04-FB01-110607A for VOCs, SVOCs, Pest, PCB, Tot Metals, Dis. Metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine

1535 - Pack up at site

1545 - Mob to Site 21 to help get truck out of mud

1635 - Depart base to ship samples

Location: NWS Yorktown Date: 11/7/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

0730 – Arrive on site

Field team: D. Livingston
P. Murphy
J. Robertson
P. Philips

Weather: sunny, cold, 38 °F

Obj: Sample monitoring wells at Site 4 and make pads at previously constructed wells

0740 – Get keys from R. Mickelborough

0750 – D. Livingston conducts H&S meeting (traffic safety, slips, trips, falls) 603H007

0755 – Calibrate Horiba U-22 ~~[illegible]~~ (DO)
with cal solution Lot # 5522 Exp: 12/8/07

pH: 3.99 Cond: 4.60

Turb: Error 5 DO: 10.86

0805 – Set up at monitoring well 04GW05 for groundwater sampling

DTW: 17.15' btoc

DTB: 27.70' btoc

1 well volume: 1.5 gallons

0815 – Begin purging 04GW05

* Note: Turbidity had error during calibration → will be recorded but may not be accurate

Location: NWS Yorktown Date: 11/7/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

04GW05

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow mL/min
0820	6.76	0.812	826	4.59	9.35	0.03	-32	18.51	450
0825	6.76	0.741	620	4.18	11.45	0.03	-6	18.74	450
0830	6.61	0.732	359	4.30	11.30	0.03	28	18.96	450
0835	6.55	0.744	320	4.29	11.20	0.03	37	19.02	450
0840	6.48	0.821	361	4.34	10.29	0.04	46	19.44	400
0845	6.53	0.865	226	4.32	10.33	0.04	45	19.68	400
0850	6.58	0.922	172	4.09	11.68	0.04	51	19.98	400
0855	6.58	0.932	161	4.04	11.54	0.04	54	20.11	400
0900	6.56	0.928	142	3.98	11.40	0.04	49	20.34	400

DO = 2.0 mg/L (Chemets) ~ 5 gallons purged

0905 – Collect sample Y504-GW05-407
for VOC, SVOC, Pest, PCB, Tot Metals, Dis Metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanidine, Alkalinity, CNDS, Sulfide, TOC, MEE&SK

* Note: MS/MSD collected (no MS/MSD for wet chemistry)

1025 – Pack up at location

1055 – Collect equipment blank Y504-EB01-110707
for

(DO)

Location: NWS Yorktown Date: 11/7/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

1120 - Pack up at location, dispose of purge water

1135 - Depart base for lunch

1225 - Dispose of garbage

1245 - Set up at monitoring well YSA14-GW01A for groundwater sampling

DTW: 13.5 btoc

DTB: 88' btoc

1 well volume: 12.0 gallons

1250 - Begin purging YSA14-GW01A

14GW01A

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow mL/min
1255	7.58	0.646	846	4.11	17.20	0.03	-161	15.22	450
1300	7.60	0.609	253	4.15	17.14	0.03	-142	16.00	300
1305	7.60	0.607	244	4.13	17.21	0.03	-140	14.91	300
1310	7.59	0.605	231	4.13	17.38	0.03	-137	17.88	300
1315	7.55	0.599	245	4.31	17.31	0.02	-123	19.12	400
1320	7.52	0.589	233	4.58	17.34	0.02	-107	20.14	400
1325	7.50	0.581	257	4.79	17.33	0.02	-85	21.31	400
1330	7.43	0.568	78.9	5.39	17.33	0.02	-41	22.11	300
1335	7.42	0.569	28.9	5.47	17.07	0.02	-31	23.81	300

Location: NWS Yorktown Date: 11/7/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

14GW01A

Time	pH	Cond	Turb	DO	Temp	Sal	ORP	DTW	Flow
1340	7.40	0.567	60.7	5.48	17.24	0.02	-26	24.02	300
1345	7.39	0.569	60.3	5.51	17.22	0.02	-28	24.65	300
1350	7.40	0.571	40.9	5.50	17.12	0.02	-33	25.47	400
1355	7.41	0.572	44.7	5.49	16.64	0.02	-38	26.28	400
1400	7.41	0.572	25.0	5.41	16.66	0.02	-42	26.45	400
1405	7.41	0.573	22.6	5.37	16.46	0.02	-42	26.50	400
1410	7.41	0.575	10.5	5.25	16.96	0.02	-49	27.10	400
1415	7.42	0.576	10.5	5.06	17.18	0.02	-59	28.40	400
1420	7.42	0.572	0.0	4.87	17.49	0.02	-63	30.58	400
1425	7.45	0.569	0.0	4.85	17.22	0.02	-67	31.00	400
1430	7.45	0.569	2.9	4.90	16.96	0.02	-64	31.20	400
1435	7.45	0.572	0.5	4.87	16.93	0.02	-65	32.33	~~400~~ AM 500
1440	7.45	0.572	44.8	4.78	17.57	0.02	-70	34.70	~~400~~ AM 500
1445	7.45	0.562	0.0	4.69	17.47	0.02	-72	37.19	500
1450	7.44	0.560	1.5	4.82	17.52	0.02	-58	38.01	500
1455	7.43	0.564	0.8	4.93	17.67	0.02	-60	38.77	500
1500	7.44	0.562	3.0	5.03	17.49	0.02	-57	39.81	500

DO = 1.0 mg/L cheaters

~ 18.5 gallons purged

1505 - Collect sample YSA14-GW01A-1107 for VOC, Tot Metals, Dis Metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine

Location NWS Yorktown Date 11/7/07

Project / Client RI (CTO 195)

Sites 4, 8, 21, 22, SSA14, AOC23

1510 - Collect Sample YSA14-GW01AP-1107 for VOC, Tot Metals, Dis Metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine

1530 - Pick up at location, dispose of purge water

1545 - Check in with L. Salomone

1605 - Depart Base to ship samples

Location NWS Yorktown Date 11/8/07

Project / Client RI (CTO 195)

0845 - Arrive on site

Field team: D. Livingston > CH2M
P. Murphy

Weather: cold, partly cloudy, 47°F

Obj: Sample monitoring wells at SSA14

0855 - Check in with T. Mason for access around Indian Head

0905 - D. Livingston conducts H&S meeting (exhaustion, dehydration, traffic safety)

0915 - Set up at monitoring well YSA14-GW05 for groundwater sampling

DTW: 16.21' btoc

DTB: 33.60 btoc

1 well volume: 2.8 gallons

0920 - Calibrate Horiba U-22 # 5034007 with Cal solution Lot # 5522 Exp: 12/06/07

pH: 3.99 Cond: 4.54 mS/cm

Turb: Error 5 DO: 10.91

(52)

Location: NWS Yorktown Date: 11/8/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

0925 - Begin purging YSA14-GW05.

14 GW05

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow mL/min
0930	6.97	0.695	>999	4.02	17.11	0.03	129	16.41	450
0935	6.98	0.694	>999	4.00	17.21	0.03	120	16.43	450
0940	7.01	0.690	>999	3.96	17.17	0.03	80	16.44	450
0945	7.02	0.686	>999	3.94	17.24	0.03	64	16.44	450
0950	7.03	0.681	>999	3.88	17.32	0.03	57	16.46	450
0955	7.05	0.685	>999	3.95	17.23	0.03	50	16.47	500
1000	7.06	0.688	>999	3.96	17.30	0.03	38	16.48	500
1005	7.06	0.687	>999	3.90	17.24	0.03	45	16.51	500
1010	7.06	0.687	>999	3.88	17.27	0.03	39	16.52	500

DO: 1.0 mg/L (chemets) ~ 11 gallons purged

1015 - Collect sample YSA14-GW05-1117 for VOC, Total Metals, Dissolved Metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanidine, IAPP, CWNS, Alkalinity, Sulfide, TOC, MEE RSK, Dehalococcoides

* MS/MSD collected (MS/MSD not collected for wet chemistry)

1050 - Pickup at location, dispose of purge water

Location: NWS Yorktown Date: 11/8/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

1100 - Set up at monitoring well YSA14-GW05A for groundwater sampling

DTW: 16.20' btoc

DTB: 34' btoc

1 well volume: 6.2 gallons

1110 - Begin purging YSA14-GW05A

14 GW05A

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow mL/min
1115	7.34	0.431	907	3.35	16.64	0.02	-100	22.71	450
1120	7.33	0.433	888	3.34	16.60	0.02	-101	23.01	450
1125	7.33	0.436	722	3.32	16.55	0.02	-103	23.25	450
1130	7.34	0.446	421	3.32	16.61	0.02	-108	23.30	500
1135	7.33	0.440	294	3.29	16.63	0.02	-114	23.05	500
1140	7.34	0.442	154	3.25	16.66	0.02	-112	23.10	500
1145	7.35	0.440	153	3.26	16.62	0.02	-111	23.02	500
1150	7.35	0.440	145	3.24	16.64	0.02	-112	23.00	500
1155	7.36	0.439	130	3.25	16.60	0.02	-113	23.01	500

DO: 1.0 mg/L (chemets) ~ 12 gallons purged

1200 - Collect sample YSA14-GW05A-1117 for VOC, Tot Metal, Dis Metal, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanidine, IAPP, CWNS, Alkalinity, Sulfide, TOC, MEE RSK, Dehalococcoides

Location: NWS Yorktown Date: 11/8/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

1220 - Pack up at location

1230 - Collect equipment blank YSA14-EB01-110807 for VOCs, Tot Metals, Dis Metals, Cyanide, Explo, PETN, 3,5-DNB, Nitroglycerin, Nitroguanadine IAAP

1245 - Pack up at site and dispose purge water

1300 - Depart base for lunch

1340 - Go to pass office to turn in paper work for F. Arroyo

1355 - Set up at monitoring well YSA14-GW01 for groundwater sampling

DTW: 12.80' btoc

DTB: 23.00' btoc

1 well volume: 1.8 gallons

1400 - Begin purging YSA14-GW01

Location: NWS Yorktown Date: 11/8/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

14GW01

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow ml/min
1405	7.03	0.691	>999	3.99	18.39	0.03	55	13.01	500
1410	7.02	0.687	>999	3.92	18.78	0.03	46	13.10	500
1415	7.03	0.686	>999	3.94	18.66	0.03	40	13.14	500
1420	7.03	0.686	>999	3.94	18.50	0.03	38	13.16	500
1425	7.03	0.682	>999	3.90	18.66	0.03	47	13.16	500
1430	7.04	0.687	>999	3.86	18.72	0.03	47	13.14	500
1435	7.04	0.680	>999	3.90	18.82	0.03	46	13.18	500
1440	7.04	0.688	>999	3.87	18.64	0.03	42	13.20	500

DO: 1.0 mg/L (Chemets) ~ 6.0 gallons purged

1445 - Collect sample YSA14-GW01-1117 for VOC, Tot metals, Dis metals, Cyanide, Explo, PETN, 3,5-DNB, Nitroglycerin, Nitroguanadine

1455 - Pack up at location

1500 - Collect field blank YSA14-FB01-110807 for VOC, Tot metals, Dis metals, Cyanide, Explo, PETN, 3,5-DNB, Nitroglycerin, Nitroguanadine

Location NWS Yorktown Date 11/8/07

Project / Client RI (CTO 195)

1510 - Pack up at location and dispose of purge water

1540 - Prep roll offs for pick up and disposal tomorrow

1545 - Depart base to ship samples

Location NWS Yorktown Date 11/9/07

Project / Client RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, HOC 23

0705 - Arrive at pass office

Field team: D. Livingston > CH2M
V. Murphy
J. Robertson > PW
V. Philips

Weather: cloudy, cold, 42°F

Obj: Sample monitoring wells, remove roll offs, develop previously existing monitoring wells

0800 - Arrive at Site 4 to pick up ~~at~~ (DO) roll off

0810 - Truck is unable to pick up roll off → only half full but contents are liquified and (shifted to back of roll off).

0845 - L. Cole on site to sign manifest → situation is explained to her, she departs site

0825 - Assess situation and call L. Cook and R. Ives for guidance

0845 - ~~Call~~ (DO) Move empty roll off closer to filled roll off for future transfer of soil

(DO)

Location: NWS Yorktown Date: 11/9/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

0920 - Given guidance to continue well development and sampling → roll offs will be dealt with next week

0940 - Call W. Thompson to cancel roll off pick up

0945 - Depart base (D. Livingston + J. Robertson) to get supplies from Lowes, P. Murphy and P. Phillips begin well development at AOC 23

1105 - D. Livingston and J. Robertson return to AOC 23

1125 - Set up Waterra pump to develop wells

1155 - Go to base environmental to update L. Cole on roll off status → she is on a conference call, will return later

1200 - Depart base to get lunch

1225 - Return to base env. → L. Cole still on phone

1230 - Calibrate Horiba U-22 # 305103 with Cal Solution Lot #5741 Exp: 5/29/08

pH: 4.00 Cond: 4.49 mS/cm

Turb: 0.0 NTU DO: 10.39 mg/L

Location: NWS Yorktown Date: 11/9/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

1235 - Set up at monitoring well YSA14-GW02 for groundwater sampling

DTW: 7.70' btoc

DTB: 20' btoc

1 well volume: 2.1 gallons

1240 - Begin purging YSA 14-GW02

14 GW02

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft btoc	Flow mL/min
1245	6.81	0.795	>999	0.22	18.08	0.03	-87	7.98	350
1250	6.84	0.791	>999	0.34	18.01	0.03	-74	8.22	400
1255	6.85	0.788	>999	0.34	17.88	0.03	-68	8.78	450
1300	6.85	0.789	>999	0.28	17.72	0.03	-62	9.14	450
1305	6.86	0.783	582	0.22	17.50	0.03	-59	9.62	450
1310	6.87	0.774	254	0.22	17.47	0.03	-47	9.91	450
1315	6.88	0.778	141	0.23	17.54	0.03	-43	9.54	450
1320	6.89	0.788	88.5	0.26	17.42	0.03	-43	9.28	450
1325	6.89	0.787	78.2	0.23	17.47	0.03	-43	9.32	450

DO = 0.8 mg/L (cheaty) ~ 7 gallons purged

1330 - Collect sample YSA14-GW02-1107 for VOC, Tot metals, Dis metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine

Location: NWS Yorktown Date: 11/9/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

1355 - Pack up at location

1400 - Collect equipment blank [YSA14-EB01-110907] for VOC, Tot metals, Dis metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine IAPP

1420 - Check in with drillers (well development)

1425 - Return to base env. → update L. Cole about roll off status

1440 - Dispose of purge water

1445 - Set up at monitoring well YSA14-GW03 for groundwater sampling

DTW: 13.95' btoc

DTB: 20' btoc

1 well volume: 1.0 gallons

1450 - Begin purging YSA14-GW03

Location: NWS Yorktown Date: 11/9/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

14GW03

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow mL/min
1455	6.95	0.875	501	0.36	17.58	0.04	143	14.31	400
1500	6.96	0.873	321	0.30	17.66	0.04	129	14.33	400
1505	6.96	0.870	195	0.28	17.58	0.04	101	14.41	400
1510	6.98	0.868	86.4	0.24	17.62	0.04	85	14.45	400
1515	6.98	0.866	157	0.24	17.59	0.04	82	14.47	400
1520	6.99	0.867	71.3	0.24	17.58	0.04	78	14.32	400
1525	7.00	0.867	54.6	0.26	17.50	0.04	74	14.35	400

DO: 0.6 mg/L (Chemets) ~6 gallons purged

1530 - Collect sample [YSA14-GW03-1107] for VOC, Tot metals, Dis metals, Cyanide, Explo, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine IAPP

1530 - Pack up at location, dispose of purge water

1555 - Drillers depart site

~~1600~~

Location: NWS Yorktown Date: 11/9/07

Project / Client: RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

Monitoring well development

AOC 23

Well ID	Gallons	Time	Appearance
12GW 22	55	2 hours	clear
12GW 26	40	4 hours	very turbid
12GW 27	55	2 hours	clear.

1605 - Depart base to ship samples

Location: NWS Yorktown Date: 11/12/07

Project / Client: NWS Yorktown CTO195

Site 4, 8, 21, 22, SSA14 AOC 23

1032 Arrive Onsite. SSA14.

Personal: M. Ost, C. Peterson CH2M Hill

Weather: overcast, 60°F

obj: Sample wells

1033 Conduct Safety brief. Traffic Awareness

1034 Calibrate Horiba Sev. # 503881

Cal Soln lot # 5741 Exp 5/29/2008

Ph: 3.99 Cond: 4.55 NTU: 0.0

1051 Mob to GW04. DTW: 36.12 DTB 103.7' BTOC

Volume 10 Gallons

1106 Commence Purge GW04

Time	Ph	Cond	Turb	DO	Temp	SAL	orp	DTW	flo
1110	6.96	0.487	0.0	1.21	17.01	0.02	-107	37.0'	330
1115	7.25	0.491	0.0	0.86	17.76	0.02	-124	39.0'	350
1120	7.33	0.490	0.0	0.86	18.07	0.02	-131	40.2'	300
1125	7.41	0.489	0.0	0.82	18.23	0.02	-134	41.0'	300
1130	7.43	0.489	0.0	0.74	18.44	0.02	-144	43.0	230
1135	7.43	0.488	0.0	0.61	18.95	0.02	-152	44.5'	230
1140	7.48	0.487	0.0	0.47	18.91	0.02	-152	45.8'	250
1145	7.44	0.489	0.0	0.47	18.89	0.02	-167	46.0'	250
1150	7.45	0.487	0.0	0.38	18.89	0.02	-167	46.5'	295
1155	7.48	0.486	0.0	0.47	18.62	0.02	-163	46.5'	250
1200	7.45	0.484	0.0	0.47	18.65	0.02	-165	47'	250
1205	7.45	0.485	0.0	0.47	18.65	0.02	-167	48'	250

Location: NWS Yorktown Date: 11/12/07

Project / Client: RI CTO 195

Site 8, 4, 14, 21, 22, AOC23

Time	Ph	Cond (mS/cm)	Turb (NTU)	DO (mg/L)	SAL (%)	Temp (C)	ORP (mV)	DTW	Flo
1210	7.45	0.485	0.0	0.47	0.02	18.67	-167	49	250

1230 Collect [YSA14-GW04-1107] As per PI.

Late Note: 1200 Collect [YSA14-FB01-111207] for Field Blank.

10 gallons Purged from GW04. DO by Chemets: 1.0 mg/L

1300 Demob GW04 Site 14

1342 Mob to GW01A Site 8

DTW: 11.82 DTB: 99.2' btoc

Volume: 10 GALLONS

1401 Commence Purge GW01A Site 8

Time	Ph	Cond (mS/cm)	Turb (NTU)	DO (mg/L)	SAL (%)	Temp (C)	ORP (mV)	DTW	Flo
1405	8.24	0.911	-5	1.09	0.04	18.32	-147	12.5'	270
1410	8.85	0.826	737	0.77	0.04	18.68	-151	13.0'	270
1415	9.95	0.759	289	0.91	0.03	18.71	-135	13.4'	270
1420	10.44	0.782	130	0.99	0.03	18.91	-133	14.1'	230
1425	10.54	0.806	154	0.73	0.04	18.92	-147	15.3'	230
1430	10.57	0.808	130	0.73	0.04	18.74	-149	15.5'	230
1435	10.56	0.821	100	0.61	0.04	18.91	-155	15.7'	220
1440	10.71	0.833	52.7	0.62	0.04	18.90	-160	16.3'	300
1445	10.55	0.793	56.2	0.90	0.03	19.04	-138	16.7'	220
1450	10.48	0.758	32.8	1.18	0.03	18.76	-131	16.7'	220
1455	10.48	0.735	57	1.49	0.03	18.78	-101	17'	22

Location: NWS Yorktown Date: 11/12/07

Project / Client: RI CTO 195

Site 8, 4, 14, 21, 22, AOC23

Time	Ph	Cond (mS/cm)	Turb (NTU)	DO (mg/L)	Temp (C)	SAL (%)	ORP (mV)	DTW	Flo
1500	10.27	0.677	74.5	2.3	18.64	0.03	-65	17'	270
1505	10.14	0.652	32.2	2.81	18.14	0.03	-46	17.5'	270
1510	9.95	0.628	37.3	3.49	18.7	0.03	-29	18'	270
1515	9.80	0.625	19.3	3.60	18.67	0.03	-22	18'	270
1520	9.79	0.622	10.2	3.61	18.68	0.03	-20	18'	270

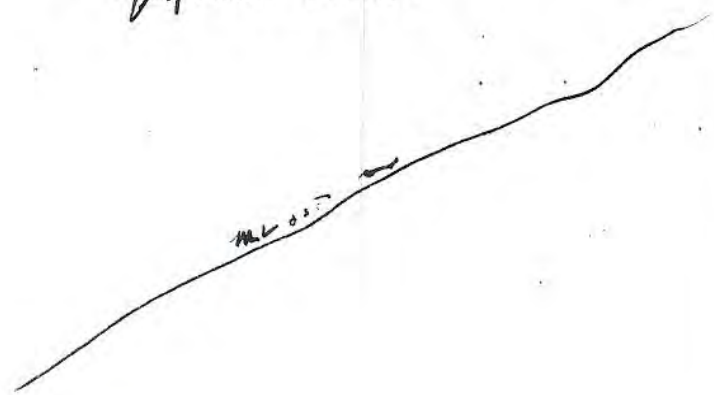
1530 Collect [YS08-GW01A-1107] As per PI x3 for MS/MSD.

10 Gallons Purged.. DO by Chemets: 1.

1705 YS08-GW01A-1107 Partial Sample. Missing filtered Metals Due to Pump Stuck in well.

1706 Demob to ship Samples

1709 No Equipment Blank Due to Equipment Failure



Location: NWS Yorktown Date: 11/13/07

Project / Client: CTO 195 RI

Site 8, 4, 22, 21, AOC 23

1115 Arrives ON Site:

Personnel: M. OST CH2M

C. Petersen CH2M

Weather: P Cloudy 75°

obj: collect Water Sample

1120 Hold Safety Tail Gate: Trip Hazards

1136 Calibrate Horiba Ser # 503881

Cal Soln Lot # 5741 Exp. 5/29/08

Ph: 3.99 Cond: 4.40 Turb: 0.0 NTU

1159 Mob to Site 8 GW01

DTW: 12.1' DTB: 21.2 Volume: 1.3 Gallons

1230 Commences Purge GW01

Time	Ph	Cond mS/cm	Turb NTU	DO mg/L	Temp C°	Sal %	orp mV	DTW	Flo
1235	6.47	0.740	956	1.60	21.29	0.03	210	12.42	170
1240	6.74	0.734	144	0.89	21.29	0.03	187	12.46'	170
1245	6.84	0.730	50.3	0.73	21.48	0.03	161	12.39	170
1250	6.87	0.729	0.0	0.51	21.23	0.03	145	12.41'	170
1255	6.90	0.730	0.0	0.55	21.12	0.03	146	12.41'	170
1300	6.90	0.728	11.0	0.51	21.70	0.03	134	12.43'	170
1305	6.91	0.728	0.0	0.50	21.59	0.03	139	12.43'	170

1315 Collect [YS08-GW01-1107] for MS/MSD AND MS per PI. DO By Chemets: 1.0 mg

2.5 Gallons Purged

Location: NWS Yorktown Date: 11/13/07

Project / Client: CTO 195 RI

Site 8, 4, 22, 21, AOC 23

1457 Demob GW01 Site 8

1458 Mob to Site 8 GW03

DTW: 9.68 DTB 18.39 Volume: 1.5 Gallons

1501 Commence Purge GW03

Time	Ph	Cond mS/cm	Turb NTU	DO mg/L	Temp C°	Sal %	orp mV	DTW	Flo
1505	6.89	0.747	324	1.83	21.68	0.03	220	9.18'	120
1510	6.86	0.747	366	1.54	21.85	0.03	208	9.18'	120
1515	6.88	0.747	109.	1.48	22.0	0.03	195	9.16'	120
1520	6.87	0.747	51.5	1.52	22.1	0.03	189	9.16'	120
1525	6.88	0.747	2.7	1.46	22.07	0.03	182	9.11'	120
1530	6.87	0.747	0.0	1.43	22.04	0.03	181	9.16'	120
1535	6.89	0.749	0.0	1.43	21.83	0.03	182	9.10	120

1540 Collect [YS08-GW03-1107] AS per PI

3.5 Total Gallons Purged. DO By Chemet:

1600 Collect [YS08-EB01-111307]

AS Per PI

1653 Demob GW03 to Dispose of IDW.

No Further Entries

Location: NWS Yorktown Date: 11/14/07

Project / Client: CTO 195 RI

Site 8, 21, 22, 14, AOC 23, 4

0900 Arrive Onsite

Personnel: M. OSI CH2M Hill

C. Peterson "

Weather: Clr 65°F

obj: Collect Water Samples

0910 Conduct Safety Brief

0918 Calibrate Horiba Sev U

503881 Cal Soln Lot 5741

Expires 5/29/08

Ph: 3.99 Cond: 4.50 Turb: 0.0

0920 Mob to GW04 DTW: 31.3 DTB 46.2 Vol 2.0

1020 Commence Purge GW04

Time	Ph	Cond	Turb	Do	Temp	Sal	orp	DTW	F
1024	7.17	0.566	29.3	1.98	18.15	0.02	226	-	320
1029	7.21	0.563	27.0	2.00	18.43	0.02	221	-	200
1034	7.21	0.561	19.8	2.01	19.01	0.02	217	-	100
1039	7.35	0.558	14.0	2.05	19.73	0.02	211	-	100
1104	7.36	0.559	13.2	2.10	19.74	0.02	211	-	100

1100 Collect [Y508-GW04-1107]

2.5 Gallons Purged. Do by Chemet 1.0 mg/L

1151 Demob Site 8 GW04

1152 Mob to Site 8 GW06. DTW: 10.49 DTB: 30.19

Volume 3.5 Gallons.

Commenced Purge GW06

Location: NWS Yorktown Date: 11/14/07

Project / Client: CTO 195 RI

Site 8, 21, 22, 14, AOC 23, 4

Time	Ph	Cond	Turb	Do	Temp	Sal	orp	DTW	Flo
1210	7.06	0.830	591	1.19	18.95	0.04	-32	12.49'	100
1215	6.91	0.829	341	0.41	19.48	0.04	-44	12.49'	100
1220	6.94	0.826	271	0.37	20.05	0.04	-51	12.49'	100
1225	6.96	0.826	138	0.32	19.30	0.04	-52	12.49	100
1230	6.97	0.831	118	0.34	19.67	0.04	-47	12.50	100
1235	6.97	0.830	125	0.34	19.86	0.04	-48	12.7'	100
1240	6.99	0.830	152	0.36	19.93	0.04	-44	13.5'	100
1245	7.00	0.832	132	0.38	19.91	0.04	-39	13.5	100

1250 Collect [Y508-GW06-1107] As per PI 4 Gallons Purged DO: 1 mg/L

1320 Collect [Y508-GW06P-1107] And [Y508-TB01-111407] As per PI

1406 Demob GW06

1430 Mob to GW08 Site 8 DTW: 10.5' DTB 19.36

1442 Commence Purge GW08 Volume: 2.5 G

Time	Ph	Cond (mS/cm)	Turb (NTU)	Do (mg/L)	Temp (C)	Sal (%)	orp (mV)	DTW	Flo
1445	6.63	1.02	-5	1.4	19.11	0.05	212	11.0'	100
1450	6.63	1.03	-5	1.19	19.12	0.05	208	11.1'	100
1455	6.68	1.03	858	1.05	19.18	0.05	199	11.1'	100
1500	6.74	1.02	324	0.91	19.12	0.05	193	11.5'	100
1505	6.77	1.02	130	0.86	19.02	0.05	187	11.5	100
1510	6.77	1.02	128	0.84	18.70	0.05	185	11.7'	100

~~1518~~

Location NWS Yorktown Date 11/14/07

Project / Client CTO 195 RI

Sites 4, 8, 21, 22, AOC 23

1515 Collect [Y508-GW08-1107] as per PI. DO by Chemets: 2.0 mg/L 4 Gallons Purged.

1600 Collect [Y508-EB01-111407] As per PI

Location NWS Yorktown Date 11/15/07

Project / Client RI (CTO 195)

Sites 4, 8, 21, 22, SSA 14, AOC 23

0740 - Arrive at pass office

Field team: D. Livingston, M. Ost } CH2M

J. Robertson, A. Hendrickson } PW

Hendrickson - Potomac

Weather: cloudy, rain, cool, 64°F

Obj: Separate soil IDW and move half to another roll off, Develop wells, sample monitoring wells at AOC 23

0901 Calibrate Horiba Ser # 503881

Cal Soln Lot 5741 Expires 05/29/2008

PH: 3.98 Cond: 4.50 Turb: 0.0

0915 Collect [Y508-EB01-111507] as per PI.

~~0920 - Hendrickson leaves~~

0920 - D. Livingston conducts HAS meeting (traffic, weather, slips)

0925 - PW begins well development at AOC 23, Hendrickson uses backhoe to move soil into new roll off

1020 - Finish moving soil → both roll offs are approx. 1/3 full

Location NWS Yorktown Date 8/11/08

Project / Client Site 8 MW Samples/GW

0800 Arrive at Site 8 after signing in w/ Tommy Mason.

Field Team: P. Murphy, A. Petree } CH2M HILL

Objective: Conduct groundwater sampling at Site 8 MWs

Weather: 72°F, Sunny

0805 P. Murphy conducts H+S meeting (slips, trips, falls, ticks, overexertion)

0810 Calibrate Horiba-U22

CH2M HILL C101499

CAL SOLUTION LOT # 4707779

exp: 07/2009

pH: 3.98

COND: 4.49 mS/cm

TURB: 0.0 NTU

0820 Begin to carry equipment and set-up at 8GW07

DTW = 32.88 ft

DTB = 47.90 ft

Well Volume = 2.45 gals.

0900 Begin purge of 8GW07. Will place pump 2ft from bottom of well.

PM

Location NWS Yorktown Date 8/11/08

Project / Client Site Groundwater Sample

weather: 75°F, Sunny

8GW07

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft bgs
0915	7.73	0.373	999	1.27	17.67	0.01	+140	32.4
0920	8.12	0.395	999	0.98	17.66	.02	+115	32.7
0925	7.98	0.404	999	0.86	17.66	.02	+101	32.7
0930	7.94	0.401	732	0.74	17.49	.02	+93	32.7
0935	8.25	0.400	592	0.67	17.76	.02	+77	32.7
0940	8.19	0.401	435	0.60	17.41	.02	+72	32.7
0945	8.31	0.411	373	0.59	17.33	.02	+66	32.9
0950	8.21	0.415	359	0.62	17.30	.02	+66	33.0
0955	8.25	0.418	360	0.62	17.30	0.02	+64	33.0
1000	8.20	0.420	315	0.60	17.33	0.02	+66	32.9

1005 Collect Sample YS08-GW07-0808

Analysis = VOCs, SVOCs, PCBs, Total and dissolved metals, Explo/PETN/RDX-DNA, nitroglycerin, nitroguanidine, Alkalinity, CNNS, MEE, Sulfides, and TOCs and cyanide.

1010 Collect Sample YS08-TD01-081108

1020 Mob equipment to truck to label all samples and sort coolers.

1030 Decon all equipment

1100 mob to Site 6 to dump IDW.

PM

Location NWS Yorktown Date 8/11/08

Project / Client Site 8 MW Sample

Weather: 75°F, Sunny

1130 Back onsite at Site 8. Begin set-up for equipment blank sample

1145 Collect Sample [YS08-EB01-081108]

Analysis: See pg. 77

200 Collect Sample: [YS08-FB01-081108]

Analysis: See pg. 77

[illegible] Begin set-up on 8GW09A

DTW: 13ft bgs Pump placed ~68ft bgs

DTB: 71ft bgs

Well Volume = 9.45 gal.

1300 Begin purging 8GW09A

Time	pH	Cond	Turb	DO	TEMP	Sal	ORP	DTW	flow
1310	7.76	0.417	999	0.00	19.63	0.02	-73	15.9	300
1315	7.71	0.413	999	0.00	19.62	0.02	-71	16.0	300
1320	7.64	0.410	872	0.00	19.41	0.02	-79	16.2	300
1325	7.57	0.434	393	0.00	19.56	0.02	-87	16.2	300
1330	7.49	0.436	213	0.00	19.13	0.02	-99	17.2	300
1335	7.47	0.490	209	0.00	19.41	0.02	-100	16.7	350
1340	7.48	0.506	177	0.00	19.17	0.02	-107	17.2	350
1345	7.49	0.516	184	0.00	19.09	0.02	-112	17.5	350
1350	7.50	0.520	176	0.00	19.08	0.02	-115	17.6	350
1355	7.52	0.525	181	0.00	19.06	0.02	-117	17.7	350
1400	7.53	0.520	191	0.00	19.05	0.02	-120	17.9	350

AM

Location NWS Yorktown Date 8/11/08

Project / Client Site 8 MW Sample

Weather:

1405 Collect Sample [YS08-GW09A-0808]

Analysis = see pg. 77

Collected MS/MSD

Total volume purged = 13 gallons

OP

1455 Begin Decon of Wilace pump

1500 MOB TO SITE 6 TO DUMP IDW

1525 Back at Site 8.

1530 Begin set-up on 8GW09

DTW: 13ft bgs (top of casing)

DTB: 34ft

Well volume = 3.4 gallons

1545 Begin purging 8GW09

Time	pH	Cond	Turb	DO	Temp	Sal	ORP	DTW	flow
1550	6.97	0.519	999	0.00	20.06	0.02	+17	13.6	300
1555	6.93	0.526	999	0.00	20.45	0.02	+3	13.5	300
1600	6.91	0.521	999	0.00	20.48	0.02	-5	13.5	300
1605	6.91	0.524	861	0.00	20.55	0.02	-6	13.5	300
1610	6.91	0.531	796	0.00	20.31	0.02	-3	13.5	300
1615	6.91	0.531	770	0.00	20.66	0.02	-3	13.5	300
1620	6.92	0.542	555	0.00	20.05	0.02	-2	13.5	300
1625	6.92	0.555	366	0.00	20.36	0.02	0	13.5	300
1630	6.92	0.560	251	0.00	20.40	0.02	+2	13.5	300
1635	6.92	0.565	178	0.00	20.35	0.02	+2	13.5	300

PM

Location NWS Yorktown Date 8/11/08

Project / Client Sites 8 GW Sample

Weather: 75°F, cloudy

1640 Collect Sample VS08-GW09-0808

Analysis: see pg. 77

Total Vol. purged: 8.0 gallons

1645 Collect Sample VS08-GW09P-0808

Analysis: see pg. 77

1715 Mob to Site 6 to dump IDW

1735 All drums labeled and in secondary containment. Gate secured. Mob to Site 8.

1745 Begin to clean-up site. Will restore silt fence.

* 1700 PUMP DECONED

1810 MOB TO TAKE TRASH

1820 OFFSITE TO SHIP COOLERS

Angela Peltier 8/11/08

Location NWS Yorktown Date 8/13/08

Project / Client Site 8 gw sampling

1400 Arrive at site 8 after signing in with Tommy Mason

Field Team: D. Livingston (CH2MHILL)
A. Petree

OBJECTIVE Conduct gw sampling

Weather: Overcast, warm, 88°F, humid

1405 - Conduct H&S meeting (slips, trips, falls, lifting, biological)

1410 - Calibrate Horiba U-22 # 2012085 with Cal ~~Stat~~ (DO) Solution

Lot #4707779 Exp: 07/2009

pH: 3.99 Turb: 0.0 NTU

Cond: 4.50 mS/cm DO: 8.45 mg/L

1415 - Set up at monitoring well 8GW08 for groundwater sampling

DTW: 13.43

DTB: 35.80 3.6 gallons

1 well volume. ~~3.6 gallons~~

1420 - Begin purging well

Location NWS Yorktown Date 8/13/08

Project / Client Site 8 GW Sampling

8GW08

Time	pH	Cond mS/cm	Turb NTU	DO mg/L	Temp °C	Sal %	ORP mV	DTW ft	Flow mL/min
1425	6.67	1.06	>999	0.00	26.80	0.50	173	14.34	450
1430	6.67	1.06	7999	0.00	20.94	0.05	169	14.34	450
1435	6.70	1.10	>999	0.00	21.09	0.05	163	14.36	450
1440	6.83	0.97	658	0.00	20.79	0.04	144	14.36	450
1445	6.87	0.995	452	0.00	20.91	0.04	128	14.18	400
1450	6.97	0.718	314	0.00	20.85	0.03	113	14.09	400
1455	6.98	0.651	286	0.00	20.88	0.03	106	14.09	400
1500	6.99	0.622	218	0.00	20.81	0.03	99	14.08	400
1505	7.00	0.605	185	0.00	20.89	0.03	95	14.07	400
1510	7.01	0.735	171	0.00	21.36	0.03	93	14.07	400
1515	7.04	0.671	133	0.00	21.33	0.03	84	14.06	400
1520	7.03	0.610	115	0.00	20.98	0.03	81	14.04	400
1525	7.03	0.601	84.7	0.00	21.35	0.03	81	14.04	400
1530	7.04	0.602	66.6	0.00	21.09	0.03	78	14.04	400
1535	7.04	0.542	49.9	0.00	20.99	0.02	79	14.03	400
1440	7.03	0.507	37.8	0.00	20.95	0.02	80	14.03	400
1445	7.02	0.507	33.0	0.00	20.69	0.02	81	14.03	400

~12.5 gallons purged

1450 - Collect sample YS08-GW08-0808 for VOC, CNNS, Alkalinity, TOC, SVOC, sulfide, MEE, PCBs, Tot + Dis. metals, cyanide, explo, nitrogen

Location NWS Yorktown Date 8/13/08

Project / Client Site 8 GW Sampling

1505 - Pack up at location

1515 - Collect equipment blank YS08-EB01-081308 for

1525 - Collect trip bank YS08-TB01-081308 for VOC

1630 - Pack up at site, ~~set up~~ sign out at T. Mason's office

1635 - Dump purge water.

1700 - Depart base to ship samples

Appendix C
Investigation-derived Waste Disposal Documentation

Ms. Terri Forte
Capitol Environmental
416 S Jefferson St #208
Roanoke VA 24011

Report Number: G808-10

Client Project: CH2M Hill-Site 21 Yorktown

Dear Ms. Forte:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call SGS at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
SGS Environmental Services, Inc.

Lori Lockamy 6/6/08

Project Manager Date
Lori Lockamy

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

SGS ENVIRONMENTAL SERVICES, INC.

Results for Pesticides
by EPA 8081

Client Sample ID: YS21-IDW052208
Client Project ID: CH2M Hill-Site 21 Yorktown
Lab Sample ID: G808-10-3C
Lab Project ID: G808-10

Analyzed By: EAW
Date Collected: 05-22-2008 10:30
Date Received: 05-23-2008 10:20
Matrix: Leachate

Compound	Result mg/L	Quantitation Limit mg/L	Dilution Factor	Date Analyzed
gamma-BHC (Lindane)	BQL	0.040	1	06-02-2008
Heptachlor	BQL	0.004	1	06-02-2008
Heptachlor epoxide	BQL	0.004	1	06-02-2008
Endrin	BQL	0.002	1	06-02-2008
Methoxychlor	BQL	0.100	1	06-02-2008
Toxaphene	BQL	0.050	1	06-02-2008
Chlordane	BQL	0.003	1	06-02-2008

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	59.4	59.4
DBC	100	81.7	81.7

Comments:
BQL = Below Quantitation Limit

Reviewed By: aec

8081_TCLP

SGS ENVIRONMENTAL SERVICES, INC.

Results for TCLP Herbicides
by EPA 8151

Client Sample ID: YS21-IDW052208
Client Project ID: CH2M Hill-Site 21 Yorktown
Lab Sample ID: G808-10-3E
Lab Project ID: G808-10

Analyzed By: DCS
Date Collected: 5/22/2008 10:30
Date Received: 5/23/2008
Matrix: Leachate

Compound	Result mg/L	Quantitation Limit mg/L	Dilution Factor	Date Analyzed
2,4-D	BQL	0.400	1	6/5/2008
2,4,5-TP(Silvex)	BQL	0.100	1	6/5/2008

Surrogate Recoveries	Spike Added	Spike Result	Percent Recovered	Flag	Limits
DCAA	2.00	1.47	74.0		35-135

Reviewed By:

8151_TCLP.XLS

SGS ENVIRONMENTAL SERVICES, INC.

Results for Semivolatiles by GCMS 8270-TCLP

Client Sample ID: YS21-IDW052208
Client Project ID: CH2M Hill-Site 21 Yorktown
Lab Sample ID: G808-10-3D
Lab Project ID: G808-10

Analyzed By: DES
Date Collected: 5/22/2008 10:30
Date Received: 5/23/2008
Date Extracted: 6/1/2008
Matrix: Leachate

Compound	Result mg/L	RL mg/L	Dilution Factor	Date Analyzed
1,4-Dichlorobenzene	BQL	0.007	1	6/3/2008
2,4-Dinitrotoluene	BQL	0.007	1	6/3/2008
Hexachlorobenzene	BQL	0.007	1	6/3/2008
Hexachlorobutadiene	BQL	0.007	1	6/3/2008
Hexachloroethane	BQL	0.007	1	6/3/2008
2-Methylphenol	BQL	0.007	1	6/3/2008
3- & 4-Methylphenol	BQL	0.007	1	6/3/2008
Nitrobenzene	BQL	0.007	1	6/3/2008
Pentachlorophenol	BQL	0.034	1	6/3/2008
Pyridine	BQL	0.007	1	6/3/2008
2,4,5-Trichlorophenol	BQL	0.007	1	6/3/2008
2,4,6-Trichlorophenol	BQL	0.007	1	6/3/2008

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.1	81
2-Fluorophenol	10	6.4	64
Nitrobenzene-d5	10	8.4	84
Phenol-d6	10	7.4	74
2,4,6-Tribromophenol	10	7.1	71
4-Terphenyl-d14	10	9.7	97

Comments:

Flags:
BQL = Below Quantitation Limits.

Reviewed By: ale

SGS ENVIRONMENTAL SERVICES, INC.

Results for Volatiles
by GCMS 8260B TCLP

Client Sample ID: YS21-IDW052208
Client Project ID: CH2M Hill-Site 21 Yorktown
Lab Sample ID: G808-10-2A
Lab Project ID: G808-10

Analyzed By: MJC
Date Collected: 5/22/2008 10:30
Date Received: 5/23/2008
Matrix: Leachate
Sample Amount: 5 mL

Compound	Result MG/L	Quantitation Limit MG/L	Dilution Factor	Date Analyzed
Benzene	BQL	0.0100	10	5/31/2008
2-Butanone (MEK)	BQL	0.250	10	5/31/2008
Carbon tetrachloride	BQL	0.0100	10	5/31/2008
Chlorobenzene	BQL	0.0100	10	5/31/2008
Chloroform	BQL	0.0100	10	5/31/2008
1,4-Dichlorobenzene	BQL	0.0100	10	5/31/2008
1,1-Dichloroethene	BQL	0.0100	10	5/31/2008
1,2-Dichloroethane	BQL	0.0100	10	5/31/2008
Tetrachloroethene	BQL	0.0100	10	5/31/2008
Trichloroethene	BQL	0.0100	10	5/31/2008
Vinyl chloride	BQL	0.0100	10	5/31/2008

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	0.01	0.0101	101
Toluene-d8	0.01	0.00996	100
4-Bromofluorobenzene	0.01	0.00923	92

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

N.C. CERTIFICATION #481

SGS ENVIRONMENTAL SERVICES, INC.

Results for Volatiles
by GCMS 8260B TCLP

Client Sample ID: YS21-TB01-052208
Client Project ID: CH2M Hill-Site 21 Yorktown
Lab Sample ID: G808-10-5A
Lab Project ID: G808-10

Analyzed By: MJC
Date Collected: 5/22/2008 0:00
Date Received: 5/23/2008
Matrix: Leachate
Sample Amount: 5 mL

Compound	Result MG/L	Quantitation Limit MG/L	Dilution Factor	Date Analyzed
Benzene	BQL	0.0100	10	5/31/2008
2-Butanone (MEK)	BQL	0.250	10	5/31/2008
Carbon tetrachloride	BQL	0.0100	10	5/31/2008
Chlorobenzene	BQL	0.0100	10	5/31/2008
Chloroform	BQL	0.0100	10	5/31/2008
1,4-Dichlorobenzene	BQL	0.0100	10	5/31/2008
1,1-Dichloroethene	BQL	0.0100	10	5/31/2008
1,2-Dichloroethane	BQL	0.0100	10	5/31/2008
Tetrachloroethene	BQL	0.0100	10	5/31/2008
Trichloroethene	BQL	0.0100	10	5/31/2008
Vinyl chloride	BQL	0.0100	10	5/31/2008

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	0.01	0.01	100
Toluene-d8	0.01	0.0101	101
4-Bromofluorobenzene	0.01	0.00885	88

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

N.C. CERTIFICATION #481

SGS ENVIRONMENTAL SERVICES, INC.

Results for Metals

Client Sample ID:	YS21-IDW052208	Analyzed By:	DCP
Client Project ID:	CH2M Hill-Site 21 Yorktown	Date Collected:	5/22/2008 10:30
Lab Sample ID:	G808-10-3	Date Received:	5/23/2008
Lab Project ID:	G808-10	Matrix:	Leachate
Batch ID:	11513 11518		

Metals TCLP	Result	RL	DF	Units	Method	Date Analyzed
Arsenic	BQL	0.200	1	MG/L	6010B	6/4/2008
Barium	BQL	5.00	1	MG/L	6010B	6/4/2008
Cadmium	BQL	0.100	1	MG/L	6010B	6/4/2008
Chromium	BQL	0.100	1	MG/L	6010B	6/4/2008
Lead	BQL	0.100	1	MG/L	6010B	6/4/2008
Mercury	BQL	0.000570	1	MG/L	7470	6/2/2008
Selenium	BQL	0.200	1	MG/L	6010B	6/4/2008
Silver	BQL	0.100	1	MG/L	6010B	6/3/2008

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > MDL

Reviewed By: ac
METALS.XLS

SGS ENVIRONMENTAL SERVICES, INC.

Results for Inorganics

Client Sample ID: YS21-IDW052208
Client Project ID: CH2M Hill-Site 21 Yorktown
Lab Sample ID: G808-10-1D
Lab Project ID: G808-10

Analyzed By: DCP
Date Collected: 05-22-2008 10:30
Date Received: 05-23-2008 10:20
Matrix: Water

Parameter	Result	Units	Procedure	Date Analyzed
pH	**7.92**	S.U.	SM4500H B	06-04-2008 1054
Temperature	**23.3**	°C		

Comments:
Samples analyzed out of 15 minute hold time.

Reviewed By: pH.XLS

CTO - 195

CHAIN OF CUSTODY RECORD
SGS Environmental Services Inc.

Locations Nationwide
- Alaska
- Ohio
- New Jersey
- West Virginia
- Hawaii
- Maryland
- North Carolina

www.us.sgs.com

0880

SGS

(1)

CLIENT: Capital Environmental

CONTACT: Terri Fort PHONE NO:(540) 777-6547

PROJECT: CH2M Hill - Site 21 Yorktown SITE/PWSID#: Site 21 - IDW

REPORTS TO: E-MAIL:

FAX NO.:( )

INVOICE TO: QUOTE #

P.O. NUMBER

SGS Reference: G808-10

PAGE 1 OF

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C= COMP, G= GRAB)	TCLP Pest	TCLP Herb	TCLP SVOC	TCLP VOC	TCLP Metals	pH				REMARKS
	Preservatives Used															
	Analysis Required (3)															
	Y521-IDW052208	5/22/08	1030	GW	9		1	1	2	3	1	1				
	Y521-TB01-052208	5/22/08		TB												Trip Blank

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:	Date	Time
[signature]	5/22/08	1600	[signature]	5/23/08	1020
Relinquished By: (2)	Date	Time	Received By:	Date	Time
Relinquished By: (3)	Date	Time	Received By:	Date	Time
Relinquished By: (4)	Date	Time	Received By:	Date	Time

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature °C: 4.2°C

Special Deliverable Requirements:

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ Date Needed ☐ STD

N.C. CERTIFICATION #481

SGS ENVIRONMENTAL SERVICES, INC.

☐ 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557
☐ 1270 Greenbrier Street Charleston, WV 25311 Tel: (304) 346-0725 Fax: (304) 346-0761

White - Retained by Lab
Yellow - Returned with Report
Pink - Retained by Sampler

Tracking #

WASTE CHARACTERIZATION REPORT

☐ ***I authorize EQ – The Environmental Quality Company to choose the appropriate facility and method of waste management from the technologies offered at the EQ facilities identified below.***

☐ **Michigan Disposal Waste Treatment Plant** (Stabilization and Treatment)	49350 N. I-94 Service Drive, Belleville, MI 48111 Phone: 800-592-5489	Fax: 800-592-5329	EPA ID # MID 000 724 831
☐ **Wayne Disposal, Inc. Site #2 Landfill** (Hazardous & PCB Waste Landfill)	49350 N. I-94 Service Drive, Belleville, MI 48111 Phone: 800-592-5489	Fax: 800-592-5329	EPA ID # MID 048 090 633
☐ **EQ Detroit, Inc.** (Stabilization, Wastewater Treatment)	1923 Frederick Street, Detroit, MI 48211 Phone: (313) 923-0080	Fax: 313-923-3375	EPA ID # MID 980 991 566
☐ **EQ Resource Recovery, Inc.** (Solvent Recycling, Fuel Blending, WW Treatment)	36345 Van Born Road, Romulus, MI 48174 Phone: 866-373-8357	Fax: 734-326-4033	EPA ID # MID 060 975 844
☐ **EQ North Carolina** (Stabilization, Treatment, Labpack Decommissioning)	1005 Investment Blvd, Apex, NC 27502 Phone: 919-363-4700	Fax: 919-363-4714	EPA ID # NCD 982 170 292
☒ **EQ Florida, Inc.** (Drum Consolidation, Labpack Decommissioning)	7202 East 8th Ave, Tampa, FL 33619 Phone: 813-623-5463	Fax: 813-628-0842	EPA ID # FLD 981 932 494
☐ **EQ Transfer & Processing** (Drum Transfer/Universal Waste Handling)	2000 Ferry Street, Detroit, MI 48211 Phone: 313-923-0080	Fax: 313-922-8419	EPA ID # MIK 939 928 313
☐ **EQ Indianapolis** (Drum Transfer/Non-Hazardous Waste Processing)	4000 West 10th Street, Indianapolis, IN 46222 Phone: 317-247-7160	Fax: 317-247-7170	EPA ID # IND 161 049 309
☐ **EQ Atlanta** (Drum Transfer/Non-Hazardous Waste Processing)	5600 Fulton Industrial Blvd SW, Atlanta, GA 30336 Phone: 404-494-3520	Fax: 404-494-3560	EPA ID # GAR 000 039 776
☐ **EQ Augusta, Inc.** (Wastewater Treatment)	3920 Goshen Industrial Blvd, Augusta, GA 30906 Phone: 706-771-9100	Fax: 706-771-9124	EPA ID # GAR 000 011 817

Waste Common Name: Nonhaz IDW - water- CTO195

Section 1 – Generator & Customer Information

SIC/NAICS*

Generator EPA ID # N/A

Generator NAVFAC Mid Atantic

Facility Address Naval Weapons Station Yorktwon

City Yorktown State VA Zip 23691

County

Mailing Address Bldg N-26, Rm 3208
9742 Maryland Ave

City Norfolk State VA Zip 23511-3095

Generator Contact Tim Reisch

Title

Phone 757-444-6890 Fax 757-444-5822

*For a list of NAICS codes, please refer to Section 9 of the EQ Resource Guide.

Internal Use Only: EQ Division .
EQ Customer No. 5247

Invoicing Company Capitol Environmental Services, Inc

Address 15C Trolley Square

City Wilmington State DE Zip 19806

Country

Invoicing Contact Terri Fort / Tammy Crotty

Phone 540-777-6447 Fax 540-777-6549

Technical Contact same

Phone Fax

Mobile Pager

E-mail terri.fort@capitol-environmental.com

Section 2 – Shipping & Packaging Information

2.1) Shipping Volume & Frequency 1 drum
☒ One Time Only ☐ Year ☐ Quarter ☐ Month

2.2) DOT Shipping Name Nonhazardous, non DOT regulated water

2.3) Is this waste surcharge exempt? ☐ Yes ☒ No
If yes, please attach a surcharge exemption form, found in Section 2 of the EQ Resource Guide.

2.4) Packaging **(check all that apply)**
☐ Bulk Solid (Yd^3 < 2000 lbs/yd^3)
☐ Bulk Solid (Ton >2000 lbs/yd^3)
☐ Bulk Liquids (Gallon)
☐ Totes, Size
☐ Cubic Yard Boxes/Bags
☒ Drums, Size 55 gallon
☐ Other (palletized, 5 gal. Pail, etc.)

Quoted bulk disposal charges for solid materials will be billed by the cubic yard, if the waste density is less than 2,000lbs./cubic yard. If waste density is greater than 2,000 lbs./cubic yard, then bulk disposal charges will be billed by the ton, regardless of the approved container.

Section 3 – Physical Characteristics

3.1) Color clear 3.2) Odor none

3.3) Does this waste contain any "Potentially Odorous Constituents" as defined in the EQ Resource Guide? (Section 3) ☐ Yes ☒ No

3.4) Physical State at 70^{0}F: ☐ Solid ☐ Dust/Powder ☒ Liquid ☐ Sludge

3.5) What is the pH of this waste? ☐ ≤2 ☐ 2.1-4.9 ☒ 5-10 ☐ 10.1-12.4 ☐ ≥12.5

3.6) What is the flash point of this waste? ☐ <90^{0}F ☐ 90-140^{0}F ☐ 140-199^{0}F ☒ >200^{0}F

3.7) Does this waste contain? **(check all that apply)** ☐ **None** ☒ Free Liquids ☐ Oily Residue ☐ Metal Fines

☐ Biodegradable Sorbants ☐ Amines ☐ Ammonia ☐ Water Reactive ☐ Biohazard ☐ Aluminum

☐ Shock Sensitive Waste ☐ Reactive Waste ☐ Radioactive Waste ☐ Explosives ☐ Pyrophoric Waste ☐ Isocyanates

☐ Asbestos – non-friable ☐ Asbestos – friable ☐ Dioxins ☐ Furans

Section 4 – Waste Composition and Generating Process

4.1) Describe the physical composition of the waste (i.e., soil, water, PPE, debris, key chemical compounds, etc.)

water >99 to % soil >1 to %

to % to %

Total: 100%

4.2) Provide a *detailed* description of the process generating this waste (attach flow diagram if available).
subsurface investigation

Section 5 – Is This Hazardous Waste?

Please refer to Section 5 of the EQ Resource Guide for a list of waste codes

As determined by 40 CFR, Part 261 and State Rules: **Please list applicable waste code(s):**

5.1) Is this an EPA RCRA listed hazardous waste (F, K, P or U)? ☐ Yes ☒ No

5.2) Is this an EPA RCRA characteristic hazardous waste (D001-D043)? ☐ Yes ☒ No

5.3) Do any State Hazardous Waste Codes apply? ☐ Yes ☒ No

5.4) Is this waste intended for wastewater treatment? ☐ Yes* ☒ No

If you answered 'no' to 5.1, 5.2, and 5.3, please skip to Section 7. *If you answered 'yes' to 5.4, please attach the Waste Characterization Report Addendum found in Section 7 of the EQ Resource Guide.

Section 6 – Hazardous Wastes

6.1) Does this waste exceed Land Disposal Restriction levels? ☐ Yes ☒ No

6.1a) If this waste stream is greater than 50% soil, does it meet the alternative soil treatment standards of 40 CFR 268.49? ☐ Yes ☒ No

6.1b) Does this waste contain greater than 50% debris, by volume? (Debris is greater than 2.5 inches in size.) ☐ Yes ☒ No

6.2) Is the waste an oxidizer (D001)? ☐ Yes ☒ No

6.3) Does this waste contain reactive cyanide ≥ 250 ppm (D003)? ☐ Yes ☒ No

6.4) Does this waste contain reactive sulfide ≥ 500 ppm (D003)? ☐ Yes ☒ No

6.5) Please indicate which constituent concentrations are below or above the regulatory level. Please indicate the basis used in the determination. Either "Below" or "Above" **MUST** be checked for each constituent.

Based On: ☒ **Generator Knowledge** ☒ **Analysis*** ☐ **MSDS***

***Please attach a copy. Analysis or MSDS are required for EQFL Non-hazardous wastes.**

Code		Regulatory Level TCLP (mg/l)	Concentration (if above)	Code		Regulatory Level TCLP (mg/l)	Concentration (if above)
D004	Arsenic	5	☒ Below ☐ Above	D024	m-Cresol	200	☒ Below ☐ Above
D005	Barium	100	☒ Below ☐ Above	D025	p-Cresol	200	☒ Below ☐ Above
D006	Cadmium	1	☒ Below ☐ Above	D026	Cresols	200	☒ Below ☐ Above
D007	Chromium	5	☒ Below ☐ Above	D027	1,4-Dichlorobenzene	7.5	☒ Below ☐ Above
D008	Lead	5	☒ Below ☐ Above	D028	1,2-Dicholoroethane	0.5	☒ Below ☐ Above
D009	Mercury	0.2	☒ Below ☐ Above	D029	1,1-Dichloroethylene	0.7	☒ Below ☐ Above
D010	Selenium	1	☒ Below ☐ Above	D030	2,4-Dinitrotoluene	0.13	☒ Below ☐ Above
D011	Silver	5	☒ Below ☐ Above	D031	Heptachlor	0.008	☒ Below ☐ Above
D012	Endrin	0.02	☒ Below ☐ Above	D032	Hexachlorobenzene	0.13	☒ Below ☐ Above
D013	Lindane	0.4	☒ Below ☐ Above	D033	Hexachlorobutadiene	0.5	☒ Below ☐ Above
D014	Methoxychlor	10	☒ Below ☐ Above	D034	Hexachloroethane	3.0	☒ Below ☐ Above
D015	Toxaphene	0.5	☒ Below ☐ Above	D035	Methyl Ethyl Ketone	200	☒ Below ☐ Above
D016	2,4-D	10	☒ Below ☐ Above	D036	Nitrobenzene	2	☒ Below ☐ Above
D017	2,4,5-TP (Silvex)	1	☒ Below ☐ Above	D037	Pentachlorophenol	100	☒ Below ☐ Above
D018	Benzene	0.5	☒ Below ☐ Above	D038	Pyridine	5	☒ Below ☐ Above
D019	Carbon Tetrachloride	0.5	☒ Below ☐ Above	D039	Tetrachloroethylene	0.7	☒ Below ☐ Above
D020	Chlordane	0.03	☒ Below ☐ Above	D040	Trichloroethylene	0.5	☒ Below ☐ Above
D021	Chlorobenzene	100	☒ Below ☐ Above	D041	2,4,5-Trichlorophenol	400	☒ Below ☐ Above
D022	Chloroform	6.0	☒ Below ☐ Above	D042	2,4,6-Trichlorophenol	2	☒ Below ☐ Above
D023	o-Cresol	200	☒ Below ☐ Above	D043	Vinyl Chloride	0.2	☒ Below ☐ Above

6.6) If this is a characteristic hazardous waste, does it contain underlying hazardous constituents? ☐ Yes ☒ No
If yes, please list the constituents in Section 11.

Section 7 – Non-Hazardous Wastes

For a complete list of non-hazardous waste codes, please refer to Section 7 of the EQ Resource Guide

Please list applicable waste code:

7.1) Is this a Michigan non-hazardous liquid industrial waste? ☐ Yes ☒ No
7.2) Is this a Universal waste? ☐ Yes ☒ No
7.3) Is this a Recyclable Commodity? (e.g.: computer monitors, free mercury, etc.) ☐ Yes ☒ No
7.4) Is this waste a recoverable petroleum product? ☐ Yes* ☒ No
7.5) Is this waste used oil as defined by 40 CFR Part 279? ☐ Yes* ☒ No

If you answered 'yes' to questions 7.4 or 7.5 please attach the Waste Characterization Report Addendum found in Section 7 of the EQ Resource Guide.

Section 8 – TSCA Information

8.1) What is the concentration of PCBs in the waste? ☒ None ☐ 0-5 ppm ☐ 6-49 ppm ☐ 50-499 ppm ☐ 500+ ppm
8.2) Does the waste contain PCB contamination from a source with a concentration ≥ 50 ppm? ☐ Yes ☒ No
If you answered "no" to 8.1 and 8.2, please skip to Section 9.
8.3) Has this waste been processed into a non-liquid form? ☐ Yes ☐ No
If yes, what was the concentration of PCBs prior to processing? ☐ N/A ☐ 0-499 ppm ☐ 500+ ppm
8.4) Is the non-liquid PCB waste in the form of soil, rags, debris, or other contaminated media? ☐ Yes ☐ No
8.5) Are you a PCB capacitor manufacturer or a PCB equipment manufacturer? ☐ Yes ☐ No
8.6) Has the PCB Article (e.g., transformer, hydraulic machine, PCB-contaminated electrical equipment) been drained/flushed of all PCBs and decontaminated in accordance with 40 CFR 761.60(b)? ☐ N/A ☐ Yes ☐ No

Section 9 – Clean Air Act Information

NESHAP SIC*		
2812	2836	2875
2813	2841	2879
2816	2842	2891
2819	2843	2892
2821	2844	2893
2822	2851	2895
2823	2861	2899
2824	2865	2911
2833	2869	3312
2834	2873	4953
2835	2874	9511

9.1) Is this waste subject to regulation under 40 CFR, Part 63, Subpart DD or 40 CFR, Part 264, Subpart CC (RCRA)? ☐ Yes ☒ No
(Does the waste contain >500 ppm Volatile Organic Hazardous Air Pollutants – VOHAP's or Volatile Organic Compounds – VOC's?)
For a complete list of VOHAP's, please see Section 11 of the EQ Resource Guide
9.2) Is the site, or waste, subject to any other MACT or NESHAP? ☐ Yes, please specify: ☒ No
9.3) Does this waste stream contain Benzene? ☐ Yes ☒ No
If you answered "no" to 9.3, please skip to Section 10.
9.4) Does the waste stream come from a facility with one of the SIC/NAICS codes listed under the Benzene NESHAP identified in 40 CFR 61, Subpart FF? ☐ Yes ☐ No
9.5) Is the generating source of this waste stream a facility with Total Annual Benzene (TAB) ≥10 Mg/year? ☐ Yes ☐ No
For assistance in calculating the TAB, please see the TAB Worksheet in Section 9 of the EQ Resource Guide.
If you answered "no" to question 9.4 and 9.5, please skip to Section 10.
9.6) Does the waste contain >10% water? ☐ Yes ☐ No
9.7) What is the TAB quantity for your facility? _____Mg/Year
9.8) Does the waste contain >1.0 mg/kg total Benzene? ☐ Yes ☐ No
9.9) What is the total Benzene concentration in your waste? _____Percent or _____ ppmw.

(Supporting analysis must be attached. Do not use TCLP analytical results. Acceptable laboratory methods include 8020, 8240, 8260, 602 and 624.)

*For a list of NAICS codes, please refer to Section 9 of the EQ Resource Guide.

Section 10 – Fuel Blending Information

10.1) Is this waste intended for fuel blending? ☐ Yes* ☒ No

*If yes, Heat value (BTU/lb.) Chlorine (%) Water (%) Solids (%)

10.2) Is this waste intended for reclamation? ☐ Yes ☒ No (5-Gallon Sample required for all reclaim waste streams)

Section 11 – Constituent Information

Please identify your waste constituents from these four categories: ***Underlying Hazardous Constituents (UHC's), Volatile Organic Hazardous Air Pollutants (VOHAP's), Volatile Organic Compounds (VOC's) and Toxic Release Inventory Constituents (TRI)***

Constituent	Concentration	UHC?	Constituent	Concentration	UHC?
	☐ Yes ☐ No			☐ Yes ☐ No	
	☐ Yes ☐ No			☐ Yes ☐ No	
	☐ Yes ☐ No			☐ Yes ☐ No	
	☐ Yes ☐ No			☐ Yes ☐ No	
	☐ Yes ☐ No			☐ Yes ☐ No	

Please see Section 11 of the EQ Resource Guide for a list of UHC's, VOHAP's and VOC's. For a complete list of TRI constituents, please refer to 40 CFR 372.65.

Section 12 – Certification

I certify that all information (including attachments) is complete and factual and is an accurate representation of the known and suspected hazards, pertaining to the waste described herein. I authorize EQ's Resource Team to add supplemental information to the waste approval file, provided I am contacted and give verbal permission. I authorize EQ's Resource Team to obtain a sample from any waste shipment for purposes of verification and confirmation. I agree that, if EQ approves the waste described herein, all such wastes that are transported, delivered, or tendered to EQ by Generator or on Generator's behalf shall be subject to, and Generator shall be bound by, the attached Standard Terms and Conditions.

Generator Signature _____ Printed Name Tim Reisch

Company NAVFAC MidAtlantic Title Date

The generator's signature MUST appear on the EQ Waste Characterization Report. If the generator has authorized a third party to certify this document, a written notice (on generator letterhead) must accompany this submittal. Although the EQ Resource Team is authorized to make certain modifications to the information provided on this form, the addition or removal of waste codes and waste constituents must be documented by the generator.

STANDARD TERMS AND CONDITIONS

The Agreement between the Customer and EQ – The Environmental Quality Company and/or its member companies (hereinafter "EQ") related to or associated with Delivered Waste, as herein defined, shall be governed by the following Standard Terms and Conditions in addition to the terms and conditions contained in any Waste Characterization Report, Customer Approval Quote Confirmation, Generator Approval Notification, Notice of Waste Approval Expiration, and/or Credit Agreement associated with such Delivered Waste.

The Customer may use its standard forms (such as purchase orders, acknowledgments of orders, and invoices) to administer its dealings under this Agreement for convenience purposes, but all provisions thereof in conflict with these terms and conditions shall be deemed stricken.

Definitions

The following definitions shall apply for purposes of this Agreement:

"Acceptable Waste" shall mean any hazardous waste, as defined under applicable State or federal law, determined by EQ as acceptable for treatment and/or disposal in accordance with this Agreement.

"Delivered Wastes" shall mean all wastes (i) which are transported, delivered, or tendered to EQ by the Customer; (ii) which the Customer has arranged for the transport, delivery or tender to EQ; or (iii)) which are transported, delivered, or tendered to EQ under a Credit Agreement between the Customer and EQ.

"Non-Conforming Wastes" shall mean wastes that (a) are not in accordance in all material respects with the warranties, descriptions, specifications or limitations stated in the Waste Characterization Report and this Agreement; (b) have constituents or components of a type or concentration not specifically identified in the Waste Characterization Report (i) which increase the nature or extent of the hazard and risk undertaken by EQ in treating and/or disposing of the waste, or (ii) for whose treatment and/or disposal a Waste Management Facility is not designed or permitted, or (iii) which increase the cost of treatment and/or disposal of waste beyond that specified in EQ's price quote; or (c) are not properly packaged, labeled, described, or placarded, or otherwise not in compliance with United States Department of Transportation and United States Environmental Protection Agency regulations.

Control of Operations.

EQ shall have sole control over all aspects of the operation of any treatment and/or disposal facility of EQ receiving Delivered Wastes under this Agreement (hereinafter, "Waste Management Facility"), including, without limitation, maintaining EQ's desired volume of Acceptable Wastes being delivered to any Waste Management Facility by the Customer or any other person or entity.

Identification of Waste.

For each waste material to be transported, delivered, or tendered to EQ under this Agreement, the Customer shall provide, or cause to be provided, to EQ a representative sample of the waste material and a completed Waste Characterization Report containing a physical and chemical description or analysis of such waste material, which description shall conform with any and all guidelines for waste acceptance provided by EQ. On the basis of EQ's analysis of such representative sample of the waste material and such Waste Characterization Report, EQ will determine whether such wastes are Acceptable Wastes. EQ does not make any guarantee that it will handle any waste material or any particular quantity or type of waste material, and EQ reserves the right to the decline to transport, treat and/or dispose of waste material. The Customer shall promptly furnish to EQ any information regarding known, suspected or planned changes in the composition of the waste material. Further, the Customer shall promptly inform EQ of any change in the characteristic or condition of the waste material which becomes known to the Customer subsequent to the date of the Waste Characterization Report.

Non-Conforming Wastes.

In the event that EQ at any time discovers that any Delivered Waste is Non-Conforming Waste, EQ may reject or revoke its acceptance of the Non-Conforming Waste. The Customer shall have seven (7) days to direct an alternative lawful manner of disposition of the waste, unless it is necessary by reason of law or otherwise to move the Non-Conforming Waste prior to expiration of the seven (7) day period. If the Customer does not direct an alternative disposal, at its option, EQ may return any such Non-Conforming Wastes to the Customer, and the Customer shall pay or reimburse EQ for all costs and expenses incurred by EQ in connection with the receipt, handling, sampling, analyses, transportation and return to the Customer of such Non-Conforming Wastes. If it is impossible or impractical for EQ to return the Non-Conforming Waste to the Customer, the Customer shall reimburse EQ for all costs, of any type or nature whatsoever, incurred by EQ, solely because such Delivered Waste was Non-Conforming Waste (including, but not limited to, all costs associated with any remedial steps necessary, due to the nature of the Non-Conforming Waste, in connection with material with which the Non-Conforming Waste may have been commingled and all expenses and charges for analyzing, handling, locating, preparing for transporting, storing and disposing of any Non-Conforming Waste).

Customer Warranty - Acceptable Wastes.

All Delivered Wastes shall be Acceptable Wastes and shall conform in all material respects to the description and specifications contained in the Waste Characterization Report. The information set forth in the Waste Characterization Report or any manifest, placard or label associated with any Delivered Wastes, or otherwise represented by the Customer or the generator (if other than the Customer) to EQ, is and shall be true, accurate and complete as of the date of receipt of the involved waste by EQ.

Customer Warranty - Title to Wastes.

Either the Customer or the generator (if other than the Customer) shall hold clear title, free of any all liens, claims, encumbrances, and charges to Delivered Waste until such waste is accepted by EQ.

Customer Warranty - Compliance with Laws.

The Customer shall comply with all applicable federal, state and local environmental statutes, regulations, and other governmental requirements, as well as directives issued by EQ from time to time, governing the transportation, treatment and/or disposal of Acceptable Wastes, including, but not limited to, all packaging, manifesting, containerization, placarding and labeling requirements.

Customer Warranty - Updating Information.

If the Customer receives information that Delivered Waste or other hazardous waste described in the Waste Characterization Report, or some component of such waste, presents or may present a hazard or risk to persons, property or the environment which was not disclosed to EQ, or if the Customer or generator (if other than the Customer) has changed the process by which such waste results, the Customer shall promptly report such information to EQ in writing.

Customer Indemnity.

The Customer shall indemnify, defend and hold harmless EQ, and its affiliated or related companies, and all of their respective present or future officers, directors, shareholders, employees and agents from and against any and all losses, damages, liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, costs and expenses (including, but not limited to, reasonable costs of defense, settlement, and reasonable attorneys' fees), which may be asserted against any or all of them by any person or any governmental agency, or which any or all of them may hereafter suffer, incur, be responsible for or pay out, as a result of or in connection with bodily injuries (including, but not limited to, death, sickness, disease and emotional or mental distress) to any person (including EQ's employees), damage (including, but not limited to, loss of use) to any property (public or private), or any requirements to conduct or incur expense for investigative, removal or remedial expenses in connection with contamination of or adverse effect on the environment, or any violation or alleged violation of any statues, ordinances, orders, rules or regulations of any governmental entity or agency, caused or arising out of (i) a breach of this Agreement by the Customer, (ii) the failure of any warranty of the Customer to be true, accurate and complete, or (iii) any willful or negligent act or omission of the Customer, or its employees or agents in connection with the performance of this Agreement.

Force Majeure

EQ shall not be liable for any failure to accept, receive, handle, treat, and/or dispose of Delivered Waste due to an act of God, fire, casualty, flood, war, strike, lockout, labor trouble, failure of public utilities, equipment failure, facility shutdown, injunction, accident, epidemic, riot, insurrection, destruction of operation or transportation facilities, the inability to procure materials, equipment, or sufficient personnel or energy in order to meet operational needs without the necessity of allocation, the failure or inability to obtain any governmental approvals or to meet Environmental Requirements (including, but not limited to voluntary or involuntary compliance with any act, exercise, assertion, or requirement of any governmental authority) which may temporarily or permanently prohibit operations of EQ, the Customer, or the Generator, or any other circumstances beyond the control of EQ which prevents or delays performance of any of its obligations under this Agreement.

Governing Laws

This Agreement shall in all respects be governed by and shall be construed in accordance with the laws of the State of Michigan applied to contracts executed and performed wholly within such state.

Appendix D
Raw Analytical Results

CTO-258
Yorktown Naval Weapons Station - Site 8
Unvalidated Direct Push Groundwater Raw Analytical Results
Spring 2007

Sample ID	YS08-DW001-0507	YS08-DW002-0507		YS08-DW002B-0607		YS08-DW002C-0607	YS08-DW003-0507	YS08-DW005-0507		YS08-DW006-0507	YS08-DW007-0507
Sample Date	5/16/07	5/16/07		6/6/07		6/6/07	5/22/07	5/18/07		5/17/07	5/18/07
Chemical Name											
Volatile Organic Compounds (UG_L)											
1,1,1-TRICHLOROETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,1-DICHLOROETHENE	10 U	6 J	4 JD	1 J	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,2,4-TRICHLOROBENZENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,2-DIBROMO-3-CHLOROPROPANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,2-DIBROMOETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,2-DICHLOROBENZENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,3-DICHLOROBENZENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
1,4-DICHLOROBENZENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
2-BUTANONE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
2-HEXANONE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
ACETONE	14 B	10 U	40 JBD	27 B	46 BD	6 JB	7 JB	3 JB	NA	10 U	4 JB
BENZENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
BROMOFORM	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
BROMOMETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
CARBON DISULFIDE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
CHLOROBENZENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
CHLOROETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
CHLOROFORM	10 U	10 U	50 U	10 U	20 U	10 U	10 U	1 J	NA	10 U	10 U
CHLOROMETHANE	3 J	10 U	50 U	10 U	20 U	10 U	2 J	2 J	NA	10 U	5 J
CIS-1,2-DICHLOROETHENE	10 U	500 E	350 D	230 E	200 D	3 J	10 U	10 U	NA	3 J	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
CYCLOHEXANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
DICHLORODIFLUOROMETHANE (FREON-12)	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
ETHYLBENZENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
ISOPROPYLBENZENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
METHYL ACETATE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
METHYLCYCLOHEXANE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	1 J	NA	10 U	1 J
METHYL-TERT-BUTYL ETHER	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
STYRENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
TETRACHLOROETHENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	6 J	NA	10 U	10 U
TOLUENE	2 JB	1 JB	50 U	14	12 JD	5 J	1 JB	2 JB	NA	10 U	2 JB
TRANS-1,2-DICHLOROETHENE	10 U	1 J	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
TRICHLOROETHENE	10 U	10	8 JD	10 U	20 U	10 U	1 J	10 U	NA	10 U	1 J
TRICHLOROFLUOROMETHANE(FREON-11)	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U
VINYL CHLORIDE	10 U	120	72 D	50	47 D	10 U	10 U	10 U	NA	10 U	10 U
XYLENE, (TOTAL)	10 U	10 U	50 U	10 U	20 U	10 U	10 U	10 U	NA	10 U	10 U

CTO-258
Yorktown Naval Weapons Station - Site 8
Unvalidated Direct Push Groundwater Raw Analytical Results
Spring 2007

Sample ID **Sample Date**	YS08-DW001-0507 5/16/07	YS08-DW002-0507 5/16/07		YS08-DW002B-0607 6/6/07		YS08-DW002C-0607 6/6/07	YS08-DW003-0507 5/22/07	YS08-DW005-0507 5/18/07		YS08-DW006-0507 5/17/07	YS08-DW007-0507 5/18/07
Chemical Name											
Explosives (UG_L)											
1,3,5-Trinitrobenzene	0.41 U	0.52 U	NA	0.51 U	NA	0.56 U	0.42 U	14	NA	0.51 U	0.38 U
1,3-Dinitrobenzene	0.41 U	0.52 U	NA	0.51 U	NA	0.2 PM	0.42 U	0.41 U	NA	0.51 U	0.38 U
2,4,6-Trinitrotoluene	0.41 U	0.52 U	NA	0.51 U	NA	0.56 U	0.42 U	84 E	80 D	0.51 U	0.38 U
2,4-Dinitrotoluene	0.41 U	0.52 U	NA	0.51 U	NA	0.56 U	0.42 U	0.41 U	NA	0.51 U	0.38 U
2,6-Dinitrotoluene	0.41 U	0.52 U	NA	0.51 U	NA	0.56 U	0.42 U	0.41 U	NA	0.51 U	0.38 U
2-Amino-4,6-dinitrotoluene	0.41 U	0.52 U	NA	0.51 U	NA	0.56 U	0.42 U	74	NA	0.51 U	0.97
2-Nitrotoluene	0.41 U	0.52 U	NA	0.51 U	NA	0.56 U	0.42 U	0.41 U	NA	0.51 U	0.38 U
3,5-Dinitroaniline	0.41 U	0.52 U	NA	0.51 U	NA	0.56 U	0.42 U	0.98	NA	0.51 U	0.38 U
3-Nitrotoluene	0.41 U	0.52 U	NA	0.51 U	NA	0.21 J	0.42 U	0.41 U	NA	0.51 U	0.38 U
4-Amino-2,6-dinitrotoluene	0.41 U	0.35 JP	NA	0.51 U	NA	0.56 U	0.42 U	80	NA	0.51 U	1.3
4-Nitrotoluene	0.41 U	0.52 U	NA	0.12 JP	NA	0.56 U	0.42 U	0.41 U	NA	0.51 U	0.38 U
HMX	0.09 JPM	18	NA	3.3	NA	0.56 U	0.82 P	47	NA	0.52 PM	59
Nitrobenzene	0.41 U	0.52 U	NA	0.51 U	NA	0.56 U	0.42 U	0.41 U	NA	0.51 U	0.14 J
Nitroglycerin	8.2 U	10 U	NA	10 U	NA	11 U	3.7 JP	14	NA	6.9 JP	7.6 U
PETN	8.2 U	10 U	NA	10 U	NA	11 U	8.4 U	8.1 U	NA	10 U	7.6 U
RDX	0.21 JPM	26	NA	1.2	NA	0.56 U	0.57 P	160 E	170 D	0.12 JP	58
Tetryl	0.41 U	0.52 U	NA	0.51 U	NA	0.56 U	0.42 U	0.41 U	NA	0.51 U	0.38 U

Notes:

B - Possible Blank Contamination
D - Diluted Result
E - Concentration Exceeded Calibration Range
J - Below Detection Limit
M - Duplicate Injection Precision Not Met
P - RPD Between 2 columns is > 40
U - Analyte Not Detected
NA - Not Analyzed
UG_L - Micrograms per Liter

CTO-258
Yorktown Naval Weapons Station - Site 22
Unvalidated Field QC Raw Analytical Results
Spring 2007

Sample ID **Sample Date**	YS08-TB01-051607 5/16/07	YS08-TB01-051707 5/17/07	YS08-TB01-051807 5/18/07	YS08-TB01-052207 5/22/07	YS08-TB01-060607 6/6/07	YS22-EB01-060807 6/8/07	YS22-FB01-060807 6/8/07	YS22-TB01-060807 6/8/07
Chemical Name								
Volatile Organic Compounds (UG_L)								
1,1,1-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-TRICHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DIBROMO-3-CHLOROPROPANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DIBROMOETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-DICHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-DICHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-BUTANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ACETONE	10 U	10 U	10 U	10 U	10 U	7 JB	7 JB	8 JB
BENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMOFORM	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMOMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CARBON DISULFIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROFORM	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CIS-1,2-DICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CYCLOHEXANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
DICHLORODIFLUOROMETHANE (FREON-12)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ETHYLBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ISOPROPYLBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
METHYL ACETATE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
METHYLCYCLOHEXANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U	10 U	10 U	10 U	2 J	2 J	10 U
METHYL-TERT-BUTYL ETHER	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
STYRENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TETRACHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TOLUENE	10 U	2 J	2 JB	10 U	10 U	10 U	10 U	10 U
TRANS-1,2-DICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TRICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TRICHLOROFLUOROMETHANE(FREON-11)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VINYL CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
XYLENE, (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Notes:

B - Possible Blank Contamination
J - Below Detection Limit
U - Analyte Not Detected
UG_L - Micrograms per Liter

CTO-195
YNWS - Site 8
Final Groundwater Raw Analytical Results
2007 - 2008

Station ID	YS08-GW01	YS08-GW01A	YS08-GW03	YS08-GW04	YS08-GW05	YS08-GW06		YS08-GW07	YS08-GW08	YS08-GW09		YS08-GW09A
Sample ID	YS08-GW01-1107	YS08-GW01A-1107	YS08-GW03-1107	YS08-GW04-1107	YS08-GW05-1107	YS08-GW06-1107	YS08-GW06P-1107	YS08-GW07-0808	YS08-GW08-0808	YS08-GW09-0808	YS08-GW09P-0808	YS08-GW09A-0808
Sample Date	11/13/07	11/12/07	11/13/07	11/14/07	11/14/07	11/14/07	11/14/07	08/11/08	08/13/08	08/11/08	08/11/08	08/11/08
Chemical Name												
Volatile Organic Compounds (UG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	3.2 J	10 U	5.4 B	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	2.3 B	10 U	10 U	2 B	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	10 U	10 U	10 U	10 U	10 U	0.44 J	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	1.1 B	10 U	1.2 B	2.4 B	0.94 B	10 U	10 U	3.7 J	10 U	10 U	10 U	10 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane (Freon-12)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl acetate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-tert-butyl ether (MTBE)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylcyclohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	7.4 J	10 U	10 U	10 U
Toluene	10 U	0.73 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane(Freon-11)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	1.2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene, total	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Station ID	YS08-GW01	YS08-GW01A	YS08-GW03	YS08-GW04	YS08-GW05	YS08-GW06		YS08-GW07	YS08-GW08	YS08-GW09		YS08-GW09A
Sample ID	YS08-GW01-1107	YS08-GW01A-1107	YS08-GW03-1107	YS08-GW04-1107	YS08-GW05-1107	YS08-GW06-1107	YS08-GW06P-1107	YS08-GW07-0808	YS08-GW08-0808	YS08-GW09-0808	YS08-GW09P-0808	YS08-GW09A-0808
Sample Date	11/13/07	11/12/07	11/13/07	11/14/07	11/14/07	11/14/07	11/14/07	08/11/08	08/13/08	08/11/08	08/11/08	08/11/08
Chemical Name												
Semivolatile Organic Compounds (UG/L)												
1,1-Biphenyl	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2,2'-Oxybis(1-chloropropane)	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4,5-Trichlorophenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4,6-Trichlorophenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4-Dichlorophenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4-Dimethylphenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4-Dinitrophenol	47 U	49 U	49 U	49 U	47 U	47 U	47 U	47 U	49 U	49 U	49 U	49 U
2,4-Dinitrotoluene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2,6-Dinitrotoluene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2-Chloronaphthalene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2-Chlorophenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2-Methylphenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
2-Nitroaniline	47 U	49 U	49 U	49 U	47 U	47 U	47 U	47 U	49 U	49 U	49 U	49 U
2-Nitrophenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
3,3'-Dichlorobenzidine	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U
3-Nitroaniline	47 U	49 U	49 U	49 U	47 U	47 U	47 U	47 U	49 U	49 U	49 U	49 U
4,6-Dinitro-2-methylphenol	47 U	49 U	49 U	49 U	47 U	47 U	47 U	47 U	49 U	49 U	49 U	49 U
4-Bromophenyl-phenylether	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
4-Chloro-3-methylphenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
4-Chloroaniline	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U
4-Chlorophenyl-phenylether	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
4-Methylphenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
4-Nitroaniline	47 U	49 U	49 U	49 U	47 U	47 U	47 U	47 U	49 U	49 U	49 U	49 U
4-Nitrophenol	47 U	49 U	49 U	49 U	47 U	47 U	47 U	47 U	49 U	49 U	49 U	49 U
Acenaphthene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Acenaphthylene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Acetophenone	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Anthracene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Atrazine	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzaldehyde	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(a)anthracene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(a)pyrene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(b)fluoranthene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(g,h,i)perylene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(k)fluoranthene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Butylbenzylphthalate	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Caprolactam	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Carbazole	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Chrysene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Di-n-butylphthalate	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Di-n-octylphthalate	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Dibenz(a,h)anthracene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Dibenzofuran	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Diethylphthalate	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Dimethyl phthalate	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Fluoranthene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Fluorene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Hexachlorobenzene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Hexachlorobutadiene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Hexachlorocyclopentadiene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Hexachloroethane	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U

Station ID	YS08-GW01	YS08-GW01A	YS08-GW03	YS08-GW04	YS08-GW05	YS08-GW06		YS08-GW07	YS08-GW08	YS08-GW09		YS08-GW09A
Sample ID	YS08-GW01-1107	YS08-GW01A-1107	YS08-GW03-1107	YS08-GW04-1107	YS08-GW05-1107	YS08-GW06-1107	YS08-GW06P-1107	YS08-GW07-0808	YS08-GW08-0808	YS08-GW09-0808	YS08-GW09P-0808	YS08-GW09A-0808
Sample Date	11/13/07	11/12/07	11/13/07	11/14/07	11/14/07	11/14/07	11/14/07	08/11/08	08/13/08	08/11/08	08/11/08	08/11/08
Chemical Name												
Indeno(1,2,3-cd)pyrene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Isophorone	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Naphthalene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Nitrobenzene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Pentachlorophenol	47 U	49 U	49 U	49 U	47 U	49 U	47 U	47 U	49 U	49 U	49 U	49 U
Phenanthrene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Phenol	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Pyrene	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
bis(2-Chloroethoxy)methane	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
bis(2-Chloroethyl)ether	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
bis(2-Ethylhexyl)phthalate	96	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
n-Nitroso-di-n-propylamine	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
n-Nitrosodiphenylamine	9.4 U	9.7 U	9.7 U	9.7 U	9.4 U	9.4 U	9.4 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U
Pesticide/Polychlorinated Biphenyls (UG/L)												
Aroclor-1016	0.96 U	0.97 U	0.95 U	0.98 U	0.96 U	0.98 U	0.97 U	0.94 U	0.98 U	0.97 U	0.96 U	0.97 U
Aroclor-1221	1.9 U	1.9 U	1.9 U	2 U	1.9 U	2 U	1.9 U	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Aroclor-1232	0.96 U	0.97 U	0.95 U	0.98 U	0.96 U	0.98 U	0.97 U	0.94 U	0.98 U	0.97 U	0.96 U	0.97 U
Aroclor-1242	0.96 U	0.97 U	0.95 U	0.98 U	0.96 U	0.98 U	0.97 U	0.94 U	0.98 U	0.97 U	0.96 U	0.97 U
Aroclor-1248	0.96 U	0.97 U	0.95 U	0.98 U	0.96 U	0.98 U	0.97 U	0.94 U	0.98 U	0.97 U	0.96 U	0.97 U
Aroclor-1254	0.96 U	0.97 U	0.95 U	0.98 U	0.96 U	0.98 U	0.97 U	0.94 U	0.98 U	0.97 U	0.96 U	0.97 U
Aroclor-1260	0.96 U	0.97 U	0.95 U	0.98 U	0.96 U	0.98 U	0.97 U	0.94 U	0.98 U	0.97 U	0.96 U	0.97 U
Explosives (UG/L)												
1,3,5-Trinitrobenzene	0.1 U	0.1 U	0.096 U	0.1 U	0.098 U	0.1 U	0.1 U	0.097 U	14	0.32	0.31	0.1 U
1,3-Dinitrobenzene	0.15 U	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	3.6 U	0.15 U	0.14 U	0.16 U
2,4,6-Trinitrotoluene	0.3	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	55	0.95	0.87	0.16 U
2,4-Dinitrotoluene	0.15 U	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	3.6 U	0.15 U	0.14 U	0.16 U
2,6-Dinitrotoluene	0.15 U	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	3.6 U	0.15 U	0.14 U	0.16 U
2-Amino-4,6-dinitrotoluene	1.9	0.3 U	0.29 U	0.31 U	0.29 U	0.31 U	0.3 U	0.29 U	73	0.7	0.67	0.31 U
2-Nitrotoluene	0.52 U	0.5 U	0.48 U	0.51 U	0.49 U	0.52 U	0.5 U	0.48 U	12 U	0.13 J	0.46 U	0.52 U
3,5-Dinitroaniline	1 UL	1 U	0.96 U	1 U	0.98 U	1 U	1 U	0.97 U	4.4 J	0.44 J	0.41 J	1 U
3-Nitrotoluene	0.52 U	0.5 U	0.48 U	0.51 U	0.49 U	0.52 U	0.5 U	0.48 U	12 U	0.49 U	0.46 U	0.52 U
4-Amino-2,6-dinitrotoluene	0.89	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	82	1.2	1.1	0.16 U
4-Nitrotoluene	0.52 U	0.5 U	0.48 U	0.51 U	0.49 U	0.52 U	0.5 U	0.48 U	12 U	0.49 U	0.46 U	0.52 U
HMX	23	0.15 U	2.3	0.15 U	0.29	0.24 J	0.15 UJ	0.15 U	83	1.8	1.7	0.16 U
Nitrobenzene	0.15 U	0.15 U	0.14 U	0.15 U	0.15 U	0.4 J	0.15 UJ	0.079 B	3.6 U	0.15 U	0.14 U	0.16 U
Nitroglycerin	1 U	1 U	0.96 U	1 U	0.98 U	0.57 J	1 U	0.97 U	24 U	0.98 U	0.91 U	1 U
Nitroguanidine	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PETN	1 U	1 U	0.96 U	1 U	0.98 U	1 U	1 U	0.97 U	24 U	0.98 U	0.91 U	1 U
RDX	18	0.25 U	0.4	0.26 U	1.9	0.26 U	0.25 U	0.24 U	300	2.4	2.3	0.26 U
Tetryl	0.15 U	0.15 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	3.6 U	0.15 U	0.14 U	0.16 U
Total Metals (UG/L)												
Aluminum	293	1,350	650	297	2,890	1,430	500	3,330	2,600	293	339	224
Antimony	60 U	2 J	60 U	60 U	60 U	2.6 J	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	10 U	10 U	10 U	10 U	5.8 J	8.1 J	5.2 J	11.5	7 J	4.3 J	10 U	10 U
Barium	31.8 J	50.6 J	28.6 J	15.1 J	47.4 J	40.5 J	35.5 J	26.7 J	31.6 J	31.1 J	32.3 J	19.2 J
Beryllium	5 U	5 U	5 U	0.19 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.4 B	1.5 B	1.2 B	1.2 B	1.2 B
Calcium	123,000	18,000	129,000	68,200	180,000	133,000	137,000	100,000	104,000	126,000	130,000	57,600
Chromium	2.1 B	9.5 J	2.9 J	6.2 J	11.3	6.2 J	2.5 J	47.2	10.1	1.7 J	1.6 J	2.1 J

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YNWS - Site 8
Final Groundwater Raw Analytical Results
2007 - 2008

Station ID	YS08-GW01	YS08-GW01A	YS08-GW03	YS08-GW04	YS08-GW05	YS08-GW06		YS08-GW07	YS08-GW08	YS08-GW09		YS08-GW09A
Sample ID	YS08-GW01-1107	YS08-GW01A-1107	YS08-GW03-1107	YS08-GW04-1107	YS08-GW05-1107	YS08-GW06-1107	YS08-GW06P-1107	YS08-GW07-0808	YS08-GW08-0808	YS08-GW09-0808	YS08-GW09P-0808	YS08-GW09A-0808
Sample Date	11/13/07	11/12/07	11/13/07	11/14/07	11/14/07	11/14/07	11/14/07	08/11/08	08/13/08	08/11/08	08/11/08	08/11/08
Chemical Name												
Cobalt	50 U	50 U	50 U	50 U	50 U	50 U	50 U	1.6 J	1.3 J	1.1 J	1.2 J	50 U
Copper	3.5 J	9.7 J	3.5 J	25 U	25 U	25 U	25 U	4 B	2.9 B	25 U	1.7 B	3.5 B
Cyanide	10 U	10 U	10 UL	10 UL	10 UL	8.2 B	10 UL	6.3 B	10 U	2.3 B	8.5 B	7.4 B
Iron	550 L	1,240 L	1,130 L	375 L	6,030 L	2,760 L	921 L	6,240	5,200	767	742	513
Lead	2.8 B	2.9 B	10 U	3 B	4.7 B	3 B	2.8 B	6.1 J	1.6 J	10 U	10 U	10 U
Magnesium	2,180 J	1,900 J	2,770 J	1,320 J	3,840 J	3,080 J	3,010 J	2,090 J	2,680 J	3,200 J	3,270 J	2,800 J
Manganese	5.8 J	6.5 J	4.8 J	2.6 J	47.6	73.5	69.4	23.7	35.5	210	213	47.1
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 U	0.2 U
Nickel	0.96 J	5.5 J	1.2 J	3.6 J	4.3 J	4.8 J	2.7 J	7.1 J	5.8 B	2.7 B	2.8 B	40 U
Potassium	1,820 J	37,600	1,750 J	1,050 J	2,050 J	2,520 J	2,230 J	10,600	3,120 J	2,680 J	2,720 J	2,980 J
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Silver	10 UL	10 UL	10 UL	10 UL	10 UL	10 UL	10 UL	1.2 B	10 U	1.4 B	1.5 B	1 B
Sodium	14,300	74,900	9,850	15,900	27,800	9,350	9,470	22,000	12,500	11,600	12,000	14,500
Thallium	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Vanadium	50 U	5.3 J	2 J	1.3 J	9.3 J	7.4 J	2.1 J	21.2 J	11 J	3.6 B	2 B	0.82 B
Zinc	7.5 J	11 J	60 U	8.4 J	10.6 J	11.3 J	4.7 J	18 B	18.4 B	12.2 B	7.6 B	7 B
Dissolved Metals (UG/L)												
Aluminum	102 J	440 J	108 J	200 U	200 B	123 B	110 B	89.8 J	200 U	200 U	200 U	200 U
Antimony	60 U	2 J	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	10 U	10 UJ	10 U	10 U	10 U	5.8 J	10 U	10 U	4.1 B	10 U	10 U	10 U
Barium	30 J	33.1 J	28.4 J	200 U	39.5 J	34.4 J	33.9 J	18.8 J	21.8 J	35.1 J	33 J	14.2 J
Beryllium	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	1.5 B	1.1 B	1.1 B	1.3 B	1 B
Calcium	113,000	5,830 J	129,000	70,500	170,000	131,000	130,000	82,000	102,000	124,000	126,000	54,300
Chromium	0.28 B	0.63 B	0.5 B	0.79 B	0.69 B	0.33 B	0.39 B	31.4	2.3 J	10 U	10 U	10 U
Cobalt	50 U	50 UJ	50 U	50 U	50 U	50 U	50 U	50 U	50 U	1.2 B	1.3 B	50 U
Copper	25 U	4.2 J	25 U	25 U	25 U	25 U	25 U	2.6 J	3 B	25 U	2 J	2.4 J
Iron	100 U	100 UJ	100 U	17.5 B	174	81.1 J	47.6 B	24.9 B	100 U	35.6 B	33.9 J	152
Lead	10 U	10 UJ	10 U	10 U	3.6 B	2.8 B	10 U	3.4 J	10 U	10 U	10 U	1.8 J
Magnesium	1,970 J	1,000 J	2,680 J	1,310 J	3,140 J	2,750 J	2,750 J	1,240 J	2,000 J	3,080 J	3,160 J	2,720 J
Manganese	0.81 B	0.8 B	0.36 B	0.53 B	3.5 J	67.6	66	4.7 B	24	201	202	45
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 U	0.2 U	0.2 U
Nickel	40 U	1.8 J	0.93 J	0.98 J	1.2 J	1.8 J	1.8 J	40 U	40 U	40 U	2 B	40 U
Potassium	1,560 J	38,400 J	1,610 J	991 J	959 J	2,030 J	2,000 J	9,840	2,200 J	2,580 J	2,670 J	3,000 J
Selenium	35 U	35 UJ	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Silver	10 UL	10 UL	10 UL	10 UL	10 UL	10 UL	10 UL	10 U	1.7 B	10 U	10 U	10 U
Sodium	13,200	68,000 J	10,000	16,400	28,000	9,280	9,110	22,200	12,200	11,700	11,800	14,200
Thallium	25 U	25 UJ	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Vanadium	50 U	2.9 J	50 U	50 U	50 U	50 U	50 U	2 B	1.1 J	0.6 B	0.85 B	50 U
Zinc	60 U	60 UJ	60 U	60 U	60 U	60 U	60 U	5.2 B	12 B	7.3 B	6.7 B	5.9 B
Wet Chemistry (MG/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity	270	NA	NA	NA	NA	280	NA	160	240	300	310	150
Carbon	0.5 U	NA	NA	NA	NA	2	NA	1	1	2	2	1
Chloride	22	NA	NA	NA	NA	17	NA	30	10	17	17	6
Ethane	3.50E-04 U	NA	NA	NA	NA	3.50E-04 U	NA	3.50E-04 U	3.70E-04	8.30E-04	1.00E-03	4.20E-04
Ethene	3.30E-04 U	NA	NA	NA	NA	3.30E-04 U	NA	3.30E-04 U	3.30E-04 U	4.90E-04	5.50E-04	3.30E-04 U
Methane	2.20E-04	NA	NA	NA	NA	7.30E-04	NA	6.00E-04	0.01	0.17	0.19	0.0021
Nitrate	0.2 H	NA	NA	NA	NA	0.006 U	NA	0.5	0.9	0.009 B	0.008 B	0.006 U
Nitrite	0.008 UH	NA	NA	NA	NA	0.008 U	NA	0.008 U	0.08	0.008 U	0.008 U	0.008 U
Sulfate	23	NA	NA	NA	NA	49	NA	48	20	22	21	17

CTO-195
YNWS - Site 8
Final Groundwater Raw Analytical Results
2007 - 2008

Station ID	YS08-GW01	YS08-GW01A	YS08-GW03	YS08-GW04	YS08-GW05	YS08-GW06		YS08-GW07	YS08-GW08	YS08-GW09		YS08-GW09A
Sample ID	YS08-GW01-1107	YS08-GW01A-1107	YS08-GW03-1107	YS08-GW04-1107	YS08-GW05-1107	YS08-GW06-1107	YS08-GW06P-1107	YS08-GW07-0808	YS08-GW08-0808	YS08-GW09-0808	YS08-GW09P-0808	YS08-GW09A-0808
Sample Date	11/13/07	11/12/07	11/13/07	11/14/07	11/14/07	11/14/07	11/14/07	08/11/08	08/13/08	08/11/08	08/11/08	08/11/08
Chemical Name												
Sulfide	38	NA	NA	NA	NA	1 U	NA	1 U	1 U	1 U	1 U	1 U
Dechlorinating Bacteria (CELL/ML)												
Dehalococcoides	10.9	NA	NA	NA	NA	1.26	NA	NA	NA	NA	NA	NA

Notes:

B - Analyte not detected above the level reported in blanks

H - Missed holding time

J - Analyte present, value may or may not be accurate or precise

L - Analyte present, value may be biased low, actual value may be higher

NA - Not analyzed

U - The material was analyed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

Shading indicates detection

CTO 258
Yorktown - Site 34
Unvalidated Groundwater Raw Analytical Data
April 2007

Sample ID	YSA14-DWB6-0407
Sample Date	4/23/07
Chemical Name	
Volatile Organic Compounds (ug/L)	
1,1,1-Trichloroethane	210 D
1,1,2,2-Tetrachloroethane	200 UD
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	200 UD
1,1,2-Trichloroethane	200 UD
1,1-Dichloroethane	56 JD
1,1-Dichloroethene	640 D
1,2,4-Trichlorobenzene	200 UD
1,2-Dibromo-3-chloropropane	200 UD
1,2-Dibromoethane	200 UD
1,2-Dichlorobenzene	200 UD
1,2-Dichloroethane	200 UD
1,2-Dichloropropane	200 UD
1,3-Dichlorobenzene	200 UD
1,4-Dichlorobenzene	200 UD
2-Butanone	200 UD
2-Hexanone	200 UD
4-Methyl-2-pentanone	200 UD
Acetone	200 UD
Benzene	200 UD
Bromodichloromethane	200 UD
Bromoform	200 UD
Bromomethane	200 UD
Carbon disulfide	200 UD
Carbon tetrachloride	200 UD
Chlorobenzene	200 UD
Chloroethane	200 UD
Chloroform	200 UD
Chloromethane	200 UD
cis-1,2-Dichloroethene	150 JD
cis-1,3-Dichloropropene	200 UD
Cumene	200 UD
Cyclohexane	200 UD
Dibromochloromethane	200 UD
Dichlorodifluoromethane(Freon-12)	200 UD
Ethylbenzene	200 UD
Methyl acetate	200 UD
Methylcyclohexane	200 UD
Methylene chloride	29 JBD
Methyl-tert-butyl ether (MTBE)	200 UD
Styrene	200 UD
Tetrachloroethene	200 UD
Toluene	200 UD
trans-1,2-Dichloroethene	200 UD
trans-1,3-Dichloropropene	200 UD
Trichloroethene	1,800 D
Trichlorofluoromethane(Freon-11)	200 UD
Vinyl chloride	200 UD
Xylene, total	200 UD

Notes:
U - Analyte not detected
J - Result may be estimated
B - Possible blank contamination
D - Diluted result

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Sample ID	YSA14-GW01-1107	YSA14-GW01A-1107	YSA14-GW01AP-1107	YSA14-GW02-1107	YSA14-GW03-1107	YSA14-GW04-1107	YSA14-GW05-1107	YSA14-GW05A-1107
Sample Date	11/8/07	11/7/07	11/7/07	11/9/07	11/9/07	11/12/07	11/8/07	11/8/07
Chemical Name								
Volatile Organic Compounds (UG_L)								
1,1,1-Trichloroethane	140	10 U	10 U	10 U	2.9 J	10 U	150	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	1.3 J	10 U	10 U	10 U	10 U	10 U	1.6 J	10 U
1,1-Dichloroethane	42	10 U	10 U	10 U	10 U	10 U	47	10 U
1,1-Dichloroethene	400	10 U	10 U	10 U	12	10 U	320	14
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	2.1 J	10 U	10 U	10 U	10 U	10 U	2.5 J	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	3.2 J	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	4 B	10 U	10 U	10 U	0.85 B	10 U	4.5 B	10 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	110	10 U	10 U	10 U	10 U	10 U	130	5.6 J
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane (Freon-12)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl acetate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylcyclohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-tert-butyl ether (MTBE)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	3.6 J	10 U	10 U	10 U	10 U	10 U	4.2 J	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	1 J	10 U	10 U
trans-1,2-Dichloroethene	1.7 J	10 U	10 U	10 U	10 U	10 U	1.8 J	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	1,400	3.9 B	4.1 B	1 J	46	10 U	1,400	64
Trichlorofluoromethane(Freon-11)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene, total	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Explosives (ug/L)								
1,3,5-Trinitrobenzene	0.1 U	0.098 U	0.098 U	0.1 U	0.099 U	0.08 J	0.037 J	0.097 U
1,3-Dinitrobenzene	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.16 U	0.15 U
2,4,6-Trinitrotoluene	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.16 U	0.15 U
2,4-Dinitrotoluene	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.16 U	0.15 U
2,6-Dinitrotoluene	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.16 U	0.15 U
2-Amino-4,6-dinitrotoluene	0.3 U	0.29 U	0.29 U	2.6	0.3 U	0.3 U	0.31 U	0.29 U
2-Nitrotoluene	0.5 U	0.49 U	0.49 U	0.5 U	0.5 U	0.5 U	0.52 U	0.48 U
3,5-Dinitroaniline	1 U	24 U	24 U	1 U	0.99 U	1 U	1 U	0.97 U
3-Nitrotoluene	0.5 U	0.49 U	0.49 U	0.5 U	0.5 U	0.5 U	0.52 U	0.48 U
4-Amino-2,6-dinitrotoluene	0.07 J	0.15 U	0.15 U	0.81	0.15 U	0.15 U	0.16 U	0.15 U
4-Nitrotoluene	0.5 U	0.49 U	0.49 U	0.5 U	0.5 U	0.5 U	0.52 U	0.48 U
HMX	8.2	0.15 U	0.15 U	59	0.48	0.15 U	0.51	0.15 U
Nitrobenzene	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	13	0.16 U	0.12 J
Nitroglycerin	1 U	0.98 U	0.98 U	1 U	0.99 U	1 U	1 U	0.97 U
Nitroguanidine	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PETN	1 U	0.98 U	0.98 U	1 U	0.99 U	1 U	1 U	0.97 U
RDX	5.5	0.24 U	0.24 U	34	0.65	0.25 U	1.2	0.24 U
Tetryl	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.16 U	0.15 U

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Sample ID	YSA14-GW01-1107	YSA14-GW01A-1107	YSA14-GW01AP-1107	YSA14-GW02-1107	YSA14-GW03-1107	YSA14-GW04-1107	YSA14-GW05-1107	YSA14-GW05A-1107
Sample Date	11/8/07	11/7/07	11/7/07	11/9/07	11/9/07	11/12/07	11/8/07	11/8/07
Chemical Name								
Total Metals (UG_L)								
ALUMINUM	10,200 K	162 J	200 U	1,480 K	138 K	270	1,510 K	387 K
ANTIMONY	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
ARSENIC	33.1	10 U	10 U	11.3	10 U	10 U	7.7 J	3.7 J
BARIUM	65.7 J	200 U	200 U	35.7 J	28.9 J	20.8 J	40.7 J	29.1 J
BERYLLIUM	0.47 J	5 UL	5 UL	5 U	5 U	5 U	0.21 J	5 U
CADMIUM	0.34 J	0.68 J	0.3 J	3.6 J	5 U	5 U	5 U	5 U
CALCIUM	171,000	52,700	51,700	132,000	127,000	57,300	131,000	83,400
CHROMIUM	151	150	72.5	7.6 J	1.7 J	14	36.7	122
COBALT	5.6 J	1.8 J	50 U	50 U	50 U	50 U	50 U	1.5 J
COPPER	25 U	25 UL	25 UL	25 U	25 U	25 U	25 U	25 U
CYANIDE	5.4 B	10 U	10 U	10 UL	10 UL	10 U	7 B	10 UL
IRON	23,400 K	1,130	634	3,390 K	249 K	1,030 L	3,490 K	1,400 K
LEAD	8.7 J	10 U	10 U	10 U	10 U	2.7 B	10 U	10 U
MAGNESIUM	6,500	5,370	5,220	3,530 J	3,460 J	3,630 J	3,510 J	2,420 J
MANGANESE	101	25.5	16.3	49.4	2.4 J	31.9	18.6	53.4
MERCURY	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL
NICKEL	67.3	73.4	35.4 J	3.1 J	40 U	6.9 J	17.2 J	57.7
POTASSIUM	4,890 J	5,480	5,280	1,580 J	1,750 J	3,370 J	1,960 J	1,870 J
SELENIUM	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
SILVER	10 UL	10 UL	10 UL	10 UL	10 UL	10 UL	10 UL	10 UL
SODIUM	11,500	55,200	53,200	8,550	23,600	23,400	12,000	6,140
THALLIUM	25 U	25 U	25 U	25 UL	25 UL	25 U	25 U	25 U
VANADIUM	49 J	1.5 J	1.1 J	4.1 J	50 U	50 U	8.6 J	1.7 J
ZINC	44.4 J	7 L	5.2 L	60.3 B	60 U	13.9 J	6.9 J	4.8 J
Dissolved Metals (UG_L)								
ALUMINUM	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
ANTIMONY	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
ARSENIC	10 U	10 U	10 U	4.9 J	10 U	10 U	10 U	10 U
BARIUM	35.4 J	200 U	200 U	32.6 J	31 J	16.6 J	35 J	26.1 J
BERYLLIUM	5 U	5 UL	5 UL	5 U	5 U	5 U	5 U	5 U
CADMIUM	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CALCIUM	127,000	54,300	53,100	130,000	132,000	55,200	126,000	79,700
CHROMIUM	0.94 L	1.8 J	0.75 L	0.39 B	0.27 B	0.37 B	0.94 J	10 U
COBALT	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
COPPER	25 U	25 UL	25 UL	25 U	25 U	25 U	25 U	25 U
IRON	27 J	143	118 L	408 B	100 U	391	27.4 B	294
LEAD	10 U	2.8 J	10 U	10 U	10 U	10 U	10 U	10 U
MAGNESIUM	3,620 J	5,430	5,260	3,350 J	3,590 J	3,530 J	3,180 J	2,270 J
MANGANESE	0.82 B	8.9 J	8.9 J	40.2 J	1.2 B	25.1	7.5 J	36.9 J
MERCURY	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL
NICKEL	1.4 J	2.5 L	2.4 L	40 U	40 U	1.5 J	5 J	40 U
POTASSIUM	1,420 J	5,580	5,420	1,320 J	1,790 J	3,290 J	1,580 J	1,810 J
SELENIUM	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
SILVER	10 UL	10 U	10 U	10 UL	10 UL	10 UL	10 UL	10 UL
SODIUM	11,300	55,600	54,000	8,650 B	24,400	22,900	12,200	5,990
THALLIUM	25 UL	25 U	25 U	25 UL	25 UL	25 U	25 U	25 U
VANADIUM	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
ZINC	60 U	5.8 L	60 UL	34.5 B	60 U	6.5 J	60 U	60 U

Notes:

B - Analyte not detected above the level reported in blanks
J - Analyte present. Value may or may not be accurate or precise
K - Analyte present. Value may be biased high. Value may be lower
L - Analyte present. Value may be biased low. Value may be higher
NA - Not analyzed
R - Unreliable Result
U - The material was analyed for, but not detected
UL - Analyte not detected, quantitation limit is probably higher
MG/L - Milligrams per liter
UG/L - Micrograms per liter
UG/L - Micrograms per liter

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YNWS - Site 8
Final Surface Water Raw Analytical Data

Station ID	YS08-SW01	YS08-SW02	YS08-SW03	YS08-SW04
Sample ID	YS08-SW01-1207	YS08-SW02-1207	YS08-SW03-1207	YS08-SW04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name				
Volatile Organic Compounds (UG/L)				
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U
1,2-Dibromoethane	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U
Carbon disulfide	10 U	10 U	10 U	10 U
Carbon tetrachloride	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U
Chloroethane	10 UJ	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U
Chloromethane	10 U	10 U	10 U	10 U
Cyclohexane	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U
Dichlorodifluoromethane (Freon-12)	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U
Isopropylbenzene	10 U	10 U	10 U	10 U
Methyl acetate	10 U	10 U	10 U	10 U
Methyl-tert-butyl ether (MTBE)	10 U	10 U	10 U	10 U
Methylcyclohexane	10 U	10 U	10 U	10 U
Methylene chloride	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U
Trichlorofluoromethane(Freon-11)	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U
Xylene, total	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U
Semivolatile Organic Compounds (UG/L)				
1,1-Biphenyl	9.4 R	9.7 U	9.7 U	9.4 U
2,2'-Oxybis(1-chloropropane)	9.4 R	9.7 U	9.7 U	9.4 U
2,4,5-Trichlorophenol	9.4 R	9.7 U	9.7 U	9.4 U
2,4,6-Trichlorophenol	9.4 R	9.7 U	9.7 U	9.4 U
2,4-Dichlorophenol	9.4 R	9.7 U	9.7 U	9.4 U
2,4-Dimethylphenol	9.4 R	9.7 U	9.7 U	9.4 U
2,4-Dinitrophenol	47 R	49 U	49 U	47 U
2,4-Dinitrotoluene	9.4 R	9.7 U	9.7 U	9.4 U

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YNWS - Site 8
Final Surface Water Raw Analytical Data

Station ID	YS08-SW01	YS08-SW02	YS08-SW03	YS08-SW04
Sample ID	YS08-SW01-1207	YS08-SW02-1207	YS08-SW03-1207	YS08-SW04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name				
2,6-Dinitrotoluene	9.4 R	9.7 U	9.7 U	9.4 U
2-Chloronaphthalene	9.4 R	9.7 U	9.7 U	9.4 U
2-Chlorophenol	9.4 R	9.7 U	9.7 U	9.4 U
2-Methylphenol	9.4 R	9.7 U	9.7 U	9.4 U
2-Nitroaniline	47 R	49 U	49 U	47 U
2-Nitrophenol	9.4 R	9.7 U	9.7 U	9.4 U
3,3'-Dichlorobenzidine	19 R	19 U	19 U	19 U
3-Nitroaniline	47 R	49 U	49 U	47 U
4,6-Dinitro-2-methylphenol	47 R	49 U	49 U	47 U
4-Bromophenyl-phenylether	9.4 R	9.7 U	9.7 U	9.4 U
4-Chloro-3-methylphenol	9.4 R	9.7 U	9.7 U	9.4 U
4-Chloroaniline	19 R	19 U	19 U	19 U
4-Chlorophenyl-phenylether	9.4 R	9.7 U	9.7 U	9.4 U
4-Methylphenol	9.4 R	9.7 U	9.7 U	9.4 U
4-Nitroaniline	47 R	49 U	49 U	47 U
4-Nitrophenol	47 R	49 U	49 U	47 U
Acenaphthene	9.4 R	9.7 U	9.7 U	9.4 U
Acenaphthylene	9.4 R	9.7 U	9.7 U	9.4 U
Acetophenone	9.4 R	9.7 U	9.7 U	9.4 U
Anthracene	9.4 R	9.7 U	9.7 U	9.4 U
Atrazine	9.4 R	9.7 U	9.7 U	9.4 U
Benzaldehyde	9.4 R	9.7 U	9.7 U	9.4 U
Benzo(a)anthracene	9.4 R	9.7 U	9.7 U	9.4 U
Benzo(a)pyrene	9.4 R	9.7 U	9.7 U	9.4 U
Benzo(b)fluoranthene	9.4 R	9.7 U	9.7 U	9.4 U
Benzo(g,h,i)perylene	9.4 R	9.7 U	9.7 U	9.4 U
Benzo(k)fluoranthene	9.4 R	9.7 U	9.7 U	9.4 U
Butylbenzylphthalate	9.4 R	9.7 U	9.7 U	9.4 U
Caprolactam	9.4 R	9.7 U	9.7 U	9.4 U
Carbazole	9.4 R	9.7 U	9.7 U	9.4 U
Chrysene	9.4 R	9.7 U	9.7 U	9.4 U
Di-n-butylphthalate	9.4 R	9.7 U	9.7 U	9.4 U
Di-n-octylphthalate	9.4 R	9.7 U	9.7 U	9.4 U
Dibenz(a,h)anthracene	9.4 R	9.7 U	9.7 U	9.4 U
Dibenzofuran	9.4 R	9.7 U	9.7 U	9.4 U
Diethylphthalate	9.4 R	9.7 U	9.7 U	9.4 U
Dimethyl phthalate	9.4 R	9.7 U	9.7 U	9.4 U
Fluoranthene	9.4 R	9.7 U	9.7 U	9.4 U
Fluorene	9.4 R	9.7 U	9.7 U	9.4 U
Hexachlorobenzene	9.4 R	9.7 U	9.7 U	9.4 U
Hexachlorobutadiene	9.4 R	9.7 U	9.7 U	9.4 U
Hexachlorocyclopentadiene	9.4 R	9.7 U	9.7 U	9.4 U
Hexachloroethane	9.4 R	9.7 U	9.7 U	9.4 U
Indeno(1,2,3-cd)pyrene	9.4 R	9.7 U	9.7 U	9.4 U
Isophorone	9.4 R	9.7 U	9.7 U	9.4 U
Naphthalene	9.4 R	9.7 U	9.7 U	9.4 U
Nitrobenzene	9.4 R	9.7 U	9.7 U	9.4 U
Pentachlorophenol	47 R	49 U	49 U	47 U
Phenanthrene	9.4 R	9.7 U	9.7 U	9.4 U
Phenol	9.4 R	9.7 U	9.7 U	9.4 U
Pyrene	9.4 R	9.7 U	9.7 U	9.4 U
bis(2-Chloroethoxy)methane	9.4 R	9.7 U	9.7 U	9.4 U
bis(2-Chloroethyl)ether	9.4 R	9.7 U	9.7 U	9.4 U
bis(2-Ethylhexyl)phthalate	9.4 R	9.7 U	9.7 U	9.4 U
n-Nitroso-di-n-propylamine	9.4 R	9.7 U	9.7 U	9.4 U
n-Nitrosodiphenylamine	9.4 R	9.7 U	9.7 U	9.4 U
Pesticide/Polychlorinated Biphenyls (UG/L)				
4,4'-DDD	0.099 U	0.094 U	0.094 U	0.094 U
4,4'-DDE	0.099 U	0.094 U	0.094 U	0.094 U

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Station ID	YS08-SW01	YS08-SW02	YS08-SW03	YS08-SW04
Sample ID	YS08-SW01-1207	YS08-SW02-1207	YS08-SW03-1207	YS08-SW04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name				
4,4'-DDT	0.099 U	0.094 U	0.094 U	0.094 U
Aldrin	0.05 U	0.047 U	0.047 U	0.047 U
Aroclor-1016	0.99 U	0.94 U	0.94 U	0.94 U
Aroclor-1221	2 U	1.9 U	1.9 U	1.9 U
Aroclor-1232	0.99 U	0.94 U	0.94 U	0.94 U
Aroclor-1242	0.99 U	0.94 U	0.94 U	0.94 U
Aroclor-1248	0.99 U	0.94 U	0.94 U	0.94 U
Aroclor-1254	0.99 U	0.94 U	0.94 U	0.94 U
Aroclor-1260	0.99 U	0.94 U	0.94 U	0.94 U
Dieldrin	0.099 U	0.094 U	0.094 U	0.094 U
Endosulfan I	0.05 U	0.047 U	0.047 U	0.047 U
Endosulfan II	0.099 U	0.094 U	0.094 U	0.094 U
Endosulfan sulfate	0.099 U	0.094 U	0.094 U	0.094 U
Endrin	0.099 U	0.094 U	0.094 U	0.094 U
Endrin aldehyde	0.099 U	0.094 U	0.094 U	0.094 U
Endrin ketone	0.099 U	0.094 U	0.094 U	0.094 U
Heptachlor	0.05 U	0.047 U	0.047 U	0.047 U
Heptachlor epoxide	0.05 U	0.047 U	0.047 U	0.047 U
Methoxychlor	0.5 U	0.47 U	0.47 U	0.47 U
Toxaphene	5 U	4.7 U	4.7 U	4.7 U
alpha-BHC	0.05 U	0.047 U	0.047 U	0.047 U
alpha-Chlordane	0.05 U	0.047 U	0.047 U	0.047 U
beta-BHC	0.05 U	0.047 U	0.047 U	0.047 U
delta-BHC	0.05 U	0.047 U	0.047 U	0.047 U
gamma-BHC (Lindane)	0.05 U	0.047 U	0.047 U	0.047 U
gamma-Chlordane	0.05 U	0.047 U	0.047 U	0.047 U
Explosives (UG/L)				
1,3,5-Trinitrobenzene	0.1 U	0.1 U	0.1 U	0.1 U
1,3-Dinitrobenzene	0.15 U	0.15 U	0.15 U	0.16 U
2,4,6-Trinitrotoluene	0.15 U	0.15 U	0.15 U	0.16 U
2,4-Dinitrotoluene	0.15 U	0.15 U	0.15 U	0.16 U
2,6-Dinitrotoluene	0.15 U	0.15 U	0.15 U	0.16 U
2-Amino-4,6-dinitrotoluene	0.3 U	0.3 U	0.3 U	0.32 U
2-Nitrotoluene	0.5 U	0.5 U	0.5 U	0.52 U
3,5-Dinitroaniline	1 U	1 U	1 U	1 U
3-Nitrotoluene	0.5 U	0.5 U	0.5 U	0.52 U
4-Amino-2,6-dinitrotoluene	0.15 U	0.15 U	0.15 U	0.16 U
4-Nitrotoluene	0.5 U	0.5 U	0.5 U	0.52 U
HMX	0.15 U	0.15 U	0.15 U	0.21 J
Nitrobenzene	0.15 U	0.15 U	0.15 U	0.16 U
Nitroglycerin	1 U	1 U	1 U	1 U
PETN	1 U	1 U	1 U	1 U
RDX	0.25 U	0.25 U	0.25 U	0.041 J
Tetryl	0.15 R	0.15 U	0.15 U	0.16 U
Total Metals (UG/L)				
Aluminum	574	293	276	329
Antimony	60 U	60 U	60 U	60 U
Arsenic	10.2 B	10 U	10 U	3.7 J
Barium	36.9 J	31.2 J	35.3 J	31.3 J
Beryllium	5 U	5 U	5 U	5 U
Cadmium	1.1 J	0.67 J	0.81 J	0.59 J
Calcium	224,000	221,000	225,000	220,000
Chromium	0.38 B	0.31 B	0.43 B	0.4 B
Cobalt	50 U	50 U	50 U	50 U
Copper	25 U	25 U	25 U	25 U
Cyanide	10 UL	10 U	10 U	10 U
Iron	370	256	252	278
Lead	10 U	50 U	50 U	50 U

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Station ID	YS08-SW01	YS08-SW02	YS08-SW03	YS08-SW04
Sample ID	YS08-SW01-1207	YS08-SW02-1207	YS08-SW03-1207	YS08-SW04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name				
Magnesium	627,000	632,000	641,000	625,000
Manganese	45.4	35.8	36.5	42.6
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 UL
Nickel	40 U	40 U	40 U	40 U
Potassium	192,000 J	210,000 J	222,000 J	213,000 J
Selenium	35 UL	35 U	35 U	35 U
Silver	10 U	10 U	10 U	10 U
Sodium	5,590,000	5,970,000	6,110,000	5,890,000
Thallium	6.6 B	125 U	125 U	125 U
Vanadium	50 U	50 U	50 U	50 U
Zinc	60 U	60 UL	60 UL	60 UL
Dissolved Metals (UG/L)				
Aluminum	315 K	101 B	108 B	125 B
Antimony	60 U	60 U	60 U	60 U
Arsenic	4.2 B	10 U	10 U	5.9 J
Barium	35.3 J	29.1 J	34.1 J	33.2 J
Beryllium	5 U	5 U	5 U	5 U
Cadmium	0.33 J	0.92 J	0.69 J	0.58 J
Calcium	212,000	229,000	234,000	224,000
Chromium	10 U	10 U	10 U	0.35 B
Cobalt	50 U	50 U	50 U	50 U
Copper	25 U	25 U	25 U	25 U
Iron	77.4 K	22.7 B	100 U	56.9 B
Lead	10 U	50 U	50 U	50 U
Magnesium	575,000	653,000	639,000	638,000
Manganese	42.7	30.8	33.3	34.5
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 UL
Nickel	40 U	40 U	40 U	40 U
Potassium	176,000 J	222,000 J	224,000 J	212,000 J
Selenium	35 UL	35 U	35 U	35 U
Silver	10 U	10 U	10 U	10 U
Sodium	4,920,000	6,230,000	6,110,000	5,930,000
Thallium	6.2 B	125 U	125 U	125 U
Vanadium	50 U	50 U	50 U	50 U
Zinc	60 U	60 UL	8.1 L	60 UL
Wet Chemistry (MG/L)				
Alkalinity	140	140	140	140

Notes:

B - Analyte not detected above the level reported in blanks

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high, actual value may be lower

L - Analyte present, value may be biased low, actual value may be higher

MG/L - Milligrams per liter

NA - Not analyzed

R - Unreliable Result

U - The material was analyed for, but not detected

UG/L - Micrograms per liter

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

Shading indicates detection

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Analytical Data

Station ID	YS08-SD01	YS08-SD02	YS08-SD03	YS08-SD04
Sample ID	YS08-SD01-1207	YS08-SD02-1207	YS08-SD03-1207	YS08-SD04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name				
Volatile Organic Compounds (UG/KG)				
1,1,1-Trichloroethane	30 U	27 U	26 U	27 U
1,1,2,2-Tetrachloroethane	30 U	27 U	26 U	27 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	30 U	27 U	26 U	27 U
1,1,2-Trichloroethane	30 U	27 U	26 U	27 U
1,1-Dichloroethane	30 U	27 U	26 U	27 U
1,1-Dichloroethene	30 U	27 U	26 U	27 U
1,2,4-Trichlorobenzene	30 U	27 U	26 U	27 U
1,2-Dibromo-3-chloropropane	30 UJ	27 UJ	26 UJ	27 UJ
1,2-Dibromoethane	30 U	27 U	26 U	27 U
1,2-Dichlorobenzene	30 U	27 U	26 U	27 U
1,2-Dichloroethane	30 U	27 U	26 U	27 U
1,2-Dichloropropane	30 U	27 U	26 U	27 U
1,3-Dichlorobenzene	30 U	27 U	26 U	27 U
1,4-Dichlorobenzene	30 U	27 U	26 U	27 U
2-Butanone	30 U	27 U	26 U	27 U
2-Hexanone	30 U	27 U	26 U	27 U
4-Methyl-2-pentanone	30 U	27 U	26 U	27 U
Acetone	30 U	27 U	26 U	29
Benzene	30 U	27 U	26 U	27 U
Bromodichloromethane	30 U	27 U	26 U	27 U
Bromoform	30 U	27 U	26 U	27 U
Bromomethane	30 U	27 U	26 U	27 U
Carbon disulfide	30 U	27 U	26 U	15 J
Carbon tetrachloride	30 U	27 U	26 U	27 U
Chlorobenzene	30 U	27 U	26 U	27 U
Chloroethane	30 U	27 U	26 U	27 U
Chloroform	30 U	27 U	26 U	27 U
Chloromethane	30 U	27 U	26 U	27 U
Cyclohexane	30 U	27 U	26 U	27 U
Dibromochloromethane	30 U	27 U	26 U	27 U
Dichlorodifluoromethane (Freon-12)	30 U	27 U	26 U	27 U
Ethylbenzene	30 U	27 U	26 U	27 U
Isopropylbenzene	30 U	27 U	26 U	27 U
Methyl acetate	30 U	27 U	26 U	27 U
Methyl-tert-butyl ether (MTBE)	30 U	27 U	26 U	27 U
Methylcyclohexane	30 U	27 U	26 U	27 U
Methylene chloride	30 U	27 U	26 U	27 U
Styrene	30 U	27 U	26 U	27 U
Tetrachloroethene	30 U	27 U	26 U	27 U
Toluene	30 U	27 U	26 U	27 U
Trichloroethene	30 U	27 U	26 U	27 U
Trichlorofluoromethane(Freon-11)	30 U	27 U	26 U	27 U
Vinyl chloride	30 U	27 U	26 U	27 U
Xylene, total	30 U	27 U	26 U	27 U
cis-1,2-Dichloroethene	30 U	27 U	26 U	27 U
cis-1,3-Dichloropropene	30 U	27 U	26 U	27 U
trans-1,2-Dichloroethene	30 U	27 U	26 U	27 U
trans-1,3-Dichloropropene	30 U	27 U	26 U	27 U
Semivolatile Organic Compounds (UG/KG)				
1,1-Biphenyl	2,000 U	1,900 U	1,800 U	2,100 U
2,2'-Oxybis(1-chloropropane)	2,000 U	1,900 U	1,800 U	2,100 U
2,4,5-Trichlorophenol	2,000 U	1,900 U	1,800 U	2,100 U
2,4,6-Trichlorophenol	2,000 U	1,900 U	1,800 U	2,100 U

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Analytical Data

Station ID	YS08-SD01	YS08-SD02	YS08-SD03	YS08-SD04
Sample ID	YS08-SD01-1207	YS08-SD02-1207	YS08-SD03-1207	YS08-SD04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name				
2,4-Dichlorophenol	2,000 U	1,900 U	1,800 U	2,100 U
2,4-Dimethylphenol	2,000 U	1,900 U	1,800 U	2,100 U
2,4-Dinitrophenol	10,000 U	9,500 U	9,400 U	11,000 U
2,4-Dinitrotoluene	2,000 U	1,900 U	1,800 U	2,100 U
2,6-Dinitrotoluene	2,000 U	1,900 U	1,800 U	2,100 U
2-Chloronaphthalene	2,000 U	1,900 U	1,800 U	2,100 U
2-Chlorophenol	2,000 U	1,900 U	1,800 U	2,100 U
2-Methylnaphthalene	2,000 U	1,900 U	1,800 U	2,100 U
2-Methylphenol	2,000 U	1,900 U	1,800 U	2,100 U
2-Nitroaniline	10,000 U	9,500 U	9,400 U	11,000 U
2-Nitrophenol	2,000 U	1,900 U	1,800 U	2,100 U
3,3'-Dichlorobenzidine	2,000 U	1,900 U	1,800 U	2,100 U
3-Nitroaniline	10,000 U	9,500 U	9,400 U	11,000 U
4,6-Dinitro-2-methylphenol	10,000 U	9,500 U	9,400 U	11,000 U
4-Bromophenyl-phenylether	2,000 U	1,900 U	1,800 U	2,100 U
4-Chloro-3-methylphenol	2,000 U	1,900 U	1,800 U	2,100 U
4-Chloroaniline	3,900 U	3,700 U	3,600 U	4,100 U
4-Chlorophenyl-phenylether	2,000 U	1,900 U	1,800 U	2,100 U
4-Methylphenol	2,000 U	1,900 U	1,800 U	2,100 U
4-Nitroaniline	10,000 U	9,500 U	9,400 U	11,000 U
4-Nitrophenol	10,000 U	9,500 U	9,400 U	11,000 U
Acenaphthene	2,000 U	1,900 U	1,800 U	2,100 U
Acenaphthylene	2,000 U	1,900 U	1,800 U	2,100 U
Acetophenone	2,000 U	1,900 U	1,800 U	2,100 U
Anthracene	2,000 U	1,900 U	1,800 U	2,100 U
Atrazine	2,000 U	1,900 U	1,800 U	2,100 U
Benzaldehyde	2,000 U	1,900 U	1,800 U	2,100 U
Benzo(a)anthracene	2,000 U	1,900 U	1,800 U	2,100 U
Benzo(a)pyrene	2,000 U	1,900 U	1,800 U	2,100 U
Benzo(b)fluoranthene	2,000 U	1,900 U	1,800 U	2,100 U
Benzo(g,h,i)perylene	2,000 U	1,900 U	1,800 U	2,100 U
Benzo(k)fluoranthene	2,000 U	1,900 U	1,800 U	2,100 U
Butylbenzylphthalate	2,000 U	1,900 U	1,800 U	2,100 U
Caprolactam	2,000 U	1,900 U	1,800 U	2,100 U
Carbazole	2,000 U	1,900 U	1,800 U	2,100 U
Chrysene	2,000 U	1,900 U	1,800 U	2,100 U
Di-n-butylphthalate	2,000 U	1,900 U	1,800 U	2,100 U
Di-n-octylphthalate	2,000 U	1,900 U	1,800 U	2,100 U
Dibenz(a,h)anthracene	2,000 U	1,900 U	1,800 U	2,100 U
Dibenzofuran	2,000 U	1,900 U	1,800 U	2,100 U
Diethylphthalate	2,000 U	1,900 U	1,800 U	2,100 U
Dimethyl phthalate	2,000 U	1,900 U	1,800 U	2,100 U
Fluoranthene	2,000 U	1,900 U	1,800 U	2,100 U
Fluorene	2,000 U	1,900 U	1,800 U	2,100 U
Hexachlorobenzene	2,000 U	1,900 U	1,800 U	2,100 U
Hexachlorobutadiene	2,000 U	1,900 U	1,800 U	2,100 U
Hexachlorocyclopentadiene	2,000 U	1,900 U	1,800 U	2,100 U
Hexachloroethane	2,000 U	1,900 U	1,800 U	2,100 U
Indeno(1,2,3-cd)pyrene	2,000 U	1,900 U	1,800 U	2,100 U
Isophorone	2,000 U	1,900 U	1,800 U	2,100 U
Naphthalene	2,000 U	1,900 U	1,800 U	2,100 U
Nitrobenzene	2,000 U	1,900 U	1,800 U	2,100 U
Pentachlorophenol	10,000 U	9,500 U	9,400 U	11,000 U
Phenanthrene	2,000 U	1,900 U	1,800 U	2,100 U
Phenol	2,000 U	1,900 U	1,800 U	2,100 U
Pyrene	2,000 U	1,900 U	1,800 U	2,100 U

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Analytical Data

Station ID	YS08-SD01	YS08-SD02	YS08-SD03	YS08-SD04
Sample ID	YS08-SD01-1207	YS08-SD02-1207	YS08-SD03-1207	YS08-SD04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name				
bis(2-Chloroethoxy)methane	2,000 U	1,900 U	1,800 U	2,100 U
bis(2-Chloroethyl)ether	2,000 U	1,900 U	1,800 U	2,100 U
bis(2-Ethylhexyl)phthalate	2,000 U	1,900 U	1,800 U	2,100 U
n-Nitroso-di-n-propylamine	2,000 U	1,900 U	1,800 U	2,100 U
n-Nitrosodiphenylamine	2,000 U	1,900 U	1,800 U	2,100 U
Pesticide/Polychlorinated Biphenyls (UG/KG)				
4,4'-DDD	9.7 U	9.2 U	9.2 U	10 U
4,4'-DDE	9.7 U	9.2 U	9.2 U	10 U
4,4'-DDT	9.7 U	9.2 U	9.2 U	10 U
Aldrin	5 U	4.7 U	4.7 U	5.3 U
Aroclor-1016	97 U	92 U	92 U	100 U
Aroclor-1221	200 U	190 U	190 U	210 U
Aroclor-1232	97 U	92 U	92 U	100 U
Aroclor-1242	97 U	92 U	92 U	100 U
Aroclor-1248	97 U	92 U	92 U	100 U
Aroclor-1254	97 U	92 U	92 U	100 U
Aroclor-1260	97 U	92 U	92 U	100 U
Dieldrin	9.7 U	9.2 U	9.2 U	10 U
Endosulfan I	5 U	4.7 U	4.7 U	5.3 U
Endosulfan II	9.7 U	9.2 U	9.2 U	10 U
Endosulfan sulfate	9.7 U	9.2 U	9.2 U	10 U
Endrin	9.7 U	9.2 U	9.2 U	10 U
Endrin aldehyde	9.7 U	9.2 U	9.2 U	10 U
Endrin ketone	9.7 U	9.2 U	9.2 U	10 U
Heptachlor	5 U	4.7 U	4.7 U	5.3 U
Heptachlor epoxide	5 U	4.7 U	4.7 U	5.3 U
Methoxychlor	50 U	47 U	47 U	53 U
Toxaphene	500 U	470 U	470 U	530 U
alpha-BHC	5 U	4.7 U	4.7 U	5.3 U
alpha-Chlordane	5 U	4.7 U	4.7 U	5.3 U
beta-BHC	5 U	4.7 U	4.7 U	5.3 U
delta-BHC	5 U	4.7 U	4.7 U	5.3 U
gamma-BHC (Lindane)	5 U	4.7 U	4.7 U	5.3 U
gamma-Chlordane	5 U	4.7 U	4.7 U	5.3 U
Explosives (UG/KG)				
1,3,5-Trinitrobenzene	250 U	250 U	250 U	250 U
1,3-Dinitrobenzene	250 U	250 U	250 U	250 U
2,4,6-Trinitrotoluene	250 U	250 U	250 U	250 U
2,4-Dinitrotoluene	250 U	250 U	250 U	250 U
2,6-Dinitrotoluene	250 U	250 U	250 U	250 U
2-Amino-4,6-dinitrotoluene	300 U	300 U	300 U	300 U
2-Nitrotoluene	250 U	250 U	250 U	250 U
3,5-Dinitroaniline	1,300 U	1,300 U	1,300 U	1,300 U
3-Nitrotoluene	250 U	250 U	250 U	250 U
4-Amino-2,6-dinitrotoluene	250 U	250 U	250 U	250 U
4-Nitrotoluene	500 U	500 U	500 U	500 U
HMX	250 U	250 U	250 U	250 U
Nitrobenzene	250 U	250 U	250 U	250 U
Nitroglycerin	500 U	500 U	500 U	500 U
Nitroguanidine	250 U	250 U	250 U	250 U
PETN	500 U	500 U	500 U	500 U
RDX	250 U	250 U	250 U	250 U
Tetryl	250 U	250 U	250 U	250 U

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Final Sediment Raw
Analytical Data

Station ID	YS08-SD01	YS08-SD02	YS08-SD03	YS08-SD04
Sample ID	YS08-SD01-1207	YS08-SD02-1207	YS08-SD03-1207	YS08-SD04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name				
Total Metals (MG/KG)				
Aluminum	19,000	18,700 J	18,100 J	26,500 J
Antimony	1.5 B	11.3 U	11 U	13.4 U
Arsenic	9	11.4	9.6	13.4
Barium	36.7 J	36.6 J	33.4 J	46.6 J
Beryllium	1 J	0.74 J	0.69 J	1.1 J
Cadmium	0.32 B	0.21 J	0.19 J	1.1 U
Calcium	2,250	2,180	2,090	2,310
Chromium	41.3	38.2 J	37.5 J	47.9 J
Cobalt	7.2 J	7.2 J	7.1 J	10.5 J
Copper	18.7	16.4	15.9	14.7
Cyanide	6 UL	5.4 UL	5.4 UL	6.4 UL
Iron	28,500	35,300 J	30,400 J	50,300 J
Lead	31.2 J	28.3	27.8	32.3
Magnesium	7,150	6,410 J	6,280 J	7,670 J
Manganese	213 K	235 J	235 J	412 J
Mercury	0.12 L	0.13 B	0.13 J	0.096 B
Nickel	17.1	15.9	15.5	19.5
Potassium	3,980	3,970 J	3,890 J	4,800 J
Selenium	7.9 U	6.6 U	1.1 B	0.62 B
Silver	1 J	0.36 J	0.45 J	2.2 U
Sodium	12,600	11,400 J	11,400 J	9,960 J
Thallium	5.6 UL	4.7 U	4.6 U	5.6 U
Vanadium	50.8	46.3 J	46.5 J	60.9 J
Zinc	108	106	99.4	73
Acid Volatile Sulfide/Simultaneously Extractable Metals (UMOL/G)				
Acid volatile sulfide	6.5	1.3 U	4.8	1.4 U
Cadmium	6.50E-04 UL	0.0023 J	0.002 J	0.0032 J
Copper	0.071 L	0.14 B	0.14 B	0.0098 B
Lead	0.1 L	0.094 J	0.092 J	0.064 J
Mercury	3.60E-04 R	3.20E-04 U	3.40E-04 U	3.60E-04 U
Nickel	0.058	0.13 J	0.12 J	0.12 J
SEM/AVS Ratio	0.17	NA	0.31	NA
Silver	0.002 UL	0.0019 U	0.003 J	0.002 U
Zinc	0.88	1.3	1.1	0.95
Wet Chemistry (MG/KG)				
Total organic carbon (TOC)	55,100	51,500	50,100	50,800
pH	6.7	6.5	7.1	7.4
Grain Size (PCT)				
Coarse Sand (%)	0.3	0.1	0.2	0.1
Fine Sand (%)	2.2	1.4	1.7	0.6
Fines (%)	92.2	90.1	90.1	94.9
GS03 Sieve 3" (75 mm)	100	100	100	100
GS05 Sieve 2" (50 mm)	100	100	100	100
GS06 Sieve 1.5" (37.5 mm)	100	100	100	100
GS07 Sieve 1" (25.0 mm)	100	100	100	100
GS08 Sieve 0.75" (19.0 mm)	100	100	100	100
GS10 Sieve 0.375" (9.5 mm)	100	100	100	100
Gravel (%)	0.6	0.00E+00	0.00E+00	0.00E+00
Medium Sand (%)	4.6	8.4	8	4.4
Sieve No. 004 (4.75 mm)	99.4	100	100	100
Sieve No. 010 (2.00 mm)	99	99.9	99.8	99.9
Sieve No. 020 (850 um)	95.2	92.4	93.1	96.1

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YNWS - Site 8
Final Sediment Raw
Analytical Data

Station ID	YS08-SD01	YS08-SD02	YS08-SD03	YS08-SD04
Sample ID	YS08-SD01-1207	YS08-SD02-1207	YS08-SD03-1207	YS08-SD04-1207
Sample Date	12/11/07	12/13/07	12/13/07	12/13/07
Chemical Name				
Sieve No. 040 (425 um)	94.4	91.5	91.8	95.5
Sieve No. 060 (250 um)	93.8	91	91.1	95.2
Sieve No. 100 (150 um)	93.3	90.7	90.7	95.1
Sieve No. 140 (106 um)	93.4	90.7	90.8	95.1
Sieve No. 200 (75 um)	92.2	90.1	90.1	94.9

Notes:

B - Analyte not detected above the level reported in blanks
J - Analyte present, value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower
L - Analyte present, value may be biased low, actual value may be higher
MG/KG - Milligrams per kilogram
NA - Not analyzed
PCT - Percent
R - Unreliable Result
U - The material was analyed for, but not detected
UG/KG - Micrograms per kilogram
UJ - Analyte not detected, quantitation limit may be inaccurate
UL - Analyte not detected, quantitation limit is probably higher
UMOL/G - Micromoles per gram
Shading indicates detection

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YNWS - Site 34
Final Sediment Raw
Analytical Data

Station ID	YSA14-SD01	YSA14-SD02	YSA14-SD03	YSA14-SD04		YSA14-SD05	YSA14-SD06
Sample ID	YSA14-SD01-1207	YSA14-SD02-1207	YSA14-SD03-1207	YSA14-SD04-1207	YSA14-SD04P-1207	YSA14-SD05-1207	YSA14-SD06-1207
Sample Date	12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	12/14/07	12/07/07
Chemical Name							
Volatile Organic Compounds (UG/KG)							
1,1,1-Trichloroethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,1,2,2-Tetrachloroethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,1,2-Trichloroethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,1-Dichloroethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,1-Dichloroethene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,2,4-Trichlorobenzene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,2-Dibromo-3-chloropropane	30 UJ	19 UJ	28 U	35 UJ	39 UJ	27 U	25 UJ
1,2-Dibromoethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,2-Dichlorobenzene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,2-Dichloroethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,2-Dichloropropane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,3-Dichlorobenzene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
1,4-Dichlorobenzene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
2-Butanone	30 U	19 U	28 U	35 U	39 U	27 U	25 U
2-Hexanone	30 U	19 U	28 U	35 U	39 U	27 U	25 U
4-Methyl-2-pentanone	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Acetone	30 U	19 U	28 U	35 U	31 J	21 J	25 U
Benzene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Bromodichloromethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Bromoform	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Bromomethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Carbon disulfide	30 U	19 U	28 U	35 U	39 U	13 J	25 U
Carbon tetrachloride	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Chlorobenzene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Chloroethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Chloroform	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Chloromethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Cyclohexane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Dibromochloromethane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Dichlorodifluoromethane (Freon-12)	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Ethylbenzene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Isopropylbenzene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Methyl acetate	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Methyl-tert-butyl ether (MTBE)	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Methylcyclohexane	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Methylene chloride	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Styrene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Tetrachloroethene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Toluene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Trichloroethene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Trichlorofluoromethane(Freon-11)	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Vinyl chloride	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Xylene, total	30 U	15 J	28 U	35 U	39 U	27 U	25 U
cis-1,2-Dichloroethene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
cis-1,3-Dichloropropene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
trans-1,2-Dichloroethene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
trans-1,3-Dichloropropene	30 U	19 U	28 U	35 U	39 U	27 U	25 U
Semivolatile Organic Compounds (UG/KG)							
1,1-Biphenyl	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2,2'-Oxybis(1-chloropropane)	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2,4,5-Trichlorophenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2,4,6-Trichlorophenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U

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YNWS - Site 34
Final Sediment Raw
Analytical Data

Station ID	YSA14-SD01	YSA14-SD02	YSA14-SD03	YSA14-SD04		YSA14-SD05	YSA14-SD06
Sample ID	YSA14-SD01-1207	YSA14-SD02-1207	YSA14-SD03-1207	YSA14-SD04-1207	YSA14-SD04P-1207	YSA14-SD05-1207	YSA14-SD06-1207
Sample Date	12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	12/14/07	12/07/07
Chemical Name							
2,4-Dichlorophenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2,4-Dimethylphenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2,4-Dinitrophenol	10,000 U	6,500 U	9,600 U	12,000 U	13,000 U	9,100 U	9,000 U
2,4-Dinitrotoluene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2,6-Dinitrotoluene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2-Chloronaphthalene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2-Chlorophenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2-Methylnaphthalene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2-Methylphenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
2-Nitroaniline	10,000 U	6,500 U	9,600 U	12,000 U	13,000 U	9,100 U	9,000 U
2-Nitrophenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
3,3'-Dichlorobenzidine	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
3-Nitroaniline	10,000 U	6,500 U	9,600 U	12,000 U	13,000 U	9,100 U	9,000 U
4,6-Dinitro-2-methylphenol	10,000 U	6,500 U	9,600 U	12,000 U	13,000 U	9,100 U	9,000 U
4-Bromophenyl-phenylether	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
4-Chloro-3-methylphenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
4-Chloroaniline	3,900 U	2,500 U	3,700 U	4,700 U	5,100 U	3,500 U	3,500 U
4-Chlorophenyl-phenylether	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
4-Methylphenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
4-Nitroaniline	10,000 U	6,500 U	9,600 U	12,000 U	13,000 U	9,100 U	9,000 U
4-Nitrophenol	10,000 U	6,500 U	9,600 U	12,000 U	13,000 U	9,100 U	9,000 U
Acenaphthene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Acenaphthylene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Acetophenone	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Anthracene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Atrazine	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Benzaldehyde	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Benzo(a)anthracene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Benzo(a)pyrene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Benzo(b)fluoranthene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Benzo(g,h,i)perylene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Benzo(k)fluoranthene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Butylbenzylphthalate	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Caprolactam	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Carbazole	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Chrysene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Di-n-butylphthalate	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Di-n-octylphthalate	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Dibenz(a,h)anthracene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Dibenzofuran	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Diethylphthalate	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Dimethyl phthalate	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Fluoranthene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Fluorene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Hexachlorobenzene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Hexachlorobutadiene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Hexachlorocyclopentadiene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Hexachloroethane	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Indeno(1,2,3-cd)pyrene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Isophorone	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Naphthalene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Nitrobenzene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Pentachlorophenol	10,000 U	6,500 U	9,600 U	12,000 U	13,000 U	9,100 U	9,000 U
Phenanthrene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Phenol	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U

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YNWS - Site 34
Final Sediment Raw
Analytical Data

Station ID	YSA14-SD01	YSA14-SD02	YSA14-SD03	YSA14-SD04		YSA14-SD05	YSA14-SD06
Sample ID	YSA14-SD01-1207	YSA14-SD02-1207	YSA14-SD03-1207	YSA14-SD04-1207	YSA14-SD04P-1207	YSA14-SD05-1207	YSA14-SD06-1207
Sample Date	12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	12/14/07	12/07/07
Chemical Name							
Pyrene	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
bis(2-Chloroethoxy)methane	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
bis(2-Chloroethyl)ether	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
bis(2-Ethylhexyl)phthalate	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
n-Nitroso-di-n-propylamine	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
n-Nitrosodiphenylamine	1,900 U	1,300 U	1,900 U	2,300 U	2,600 U	1,800 U	1,700 U
Pesticide/Polychlorinated Biphenyls (UG/KG)							
4,4'-DDD	9.6 U	6.3 U	9.4 U	12 U	13 U	8.9 U	8.7 U
4,4'-DDE	9.6 U	6.3 U	9.4 U	12 U	13 U	8.9 U	8.7 U
4,4'-DDT	9.6 U	6.3 U	9.4 U	12 U	13 U	8.9 U	8.7 U
Aldrin	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
Aroclor-1016	96 U	63 U	94 U	120 U	130 U	89 U	87 U
Aroclor-1221	200 U	130 U	190 U	240 U	260 U	180 U	180 U
Aroclor-1232	96 U	63 U	94 U	120 U	130 U	89 U	87 U
Aroclor-1242	96 U	63 U	94 U	120 U	130 U	89 U	87 U
Aroclor-1248	96 U	63 U	94 U	120 U	130 U	89 U	87 U
Aroclor-1254	96 U	63 U	94 U	120 U	130 U	89 U	87 U
Aroclor-1260	96 U	63 U	94 U	120 U	130 U	89 U	87 U
Dieldrin	9.6 U	6.3 U	9.4 U	12 U	13 U	8.9 U	8.7 U
Endosulfan I	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
Endosulfan II	9.6 U	6.3 U	9.4 U	12 U	13 U	8.9 U	8.7 U
Endosulfan sulfate	9.6 U	6.3 U	9.4 U	12 U	13 U	8.9 U	8.7 U
Endrin	9.6 U	6.3 U	9.4 U	12 U	13 U	8.9 U	8.7 U
Endrin aldehyde	9.6 U	6.3 U	9.4 U	12 U	13 U	8.9 U	8.7 U
Endrin ketone	9.6 U	6.3 U	9.4 U	12 U	13 U	8.9 U	8.7 U
Heptachlor	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
Heptachlor epoxide	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
Methoxychlor	50 U	33 U	49 U	61 U	65 U	46 U	45 U
Toxaphene	500 U	330 U	490 U	610 U	650 U	460 U	450 U
alpha-BHC	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
alpha-Chlordane	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
beta-BHC	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
delta-BHC	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
gamma-BHC (Lindane)	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
gamma-Chlordane	5 U	3.3 U	4.9 U	6.1 U	6.5 U	4.6 U	4.5 U
Explosives (UG/KG)							
1,3,5-Trinitrobenzene	250 U	250 U	250 U	240 U	250 U	250 U	250 U
1,3-Dinitrobenzene	250 U	250 U	250 U	240 U	250 U	250 U	250 U
2,4,6-Trinitrotoluene	250 U	250 U	250 U	240 U	250 U	250 U	250 U
2,4-Dinitrotoluene	250 U	250 U	250 U	240 U	250 U	250 U	250 U
2,6-Dinitrotoluene	250 U	250 U	250 U	240 U	250 U	250 U	250 U
2-Amino-4,6-dinitrotoluene	300 U	300 U	300 U	290 U	300 U	300 U	300 U
2-Nitrotoluene	250 U	250 U	250 U	240 U	250 U	250 U	250 U
3,5-Dinitroaniline	1,300 U	1,300 U	1,300 U	1,300 U	1,300 U	1,300 U	1,300 U
3-Nitrotoluene	250 U	250 U	250 U	240 U	250 U	250 U	250 U
4-Amino-2,6-dinitrotoluene	250 U	250 U	250 U	240 U	250 U	250 U	250 U
4-Nitrotoluene	500 U	500 U	500 U	490 U	500 U	500 U	500 U
HMX	250 U	250 U	250 U	240 U	250 U	250 U	250 U
Nitrobenzene	250 U	250 U	250 U	240 U	250 U	250 U	250 U
Nitroglycerin	500 U	500 U	500 U	490 U	500 U	500 U	500 U
Nitroguanidine	250 U	250 U	250 U	250 U	250 U	250 U	250 U
PETN	500 U	500 U	500 U	490 U	500 U	500 U	500 U
RDX	250 U	250 U	250 U	240 U	250 U	250 U	250 U

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YNWS - Site 34
Final Sediment Raw
Analytical Data

Station ID	YSA14-SD01	YSA14-SD02	YSA14-SD03	YSA14-SD04		YSA14-SD05	YSA14-SD06
Sample ID	YSA14-SD01-1207	YSA14-SD02-1207	YSA14-SD03-1207	YSA14-SD04-1207	YSA14-SD04P-1207	YSA14-SD05-1207	YSA14-SD06-1207
Sample Date	12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	12/14/07	12/07/07
Chemical Name							
Tetryl	250 U	250 U	250 U	240 U	250 U	250 U	250 U
Total Metals (MG/KG)							
Aluminum	18,500	6,390 J	21,400 J	18,600	18,000	18,800 J	16,700
Antimony	1.7 B	8.1 U	12 U	15.3 UL	1.4 B	12.6 U	12.2 UL
Arsenic	13	8.3	12.4	12.1	12.9	8.8	12.2
Barium	38.7 J	12.7 J	40.1 J	36.1 J	35.2 J	34 J	33.9 J
Beryllium	1.1 J	0.37 J	0.88 J	0.98 J	0.99 J	0.78 J	0.88 J
Cadmium	0.51 B	0.058 J	0.32 J	0.53 B	0.56 B	0.095 J	0.36 B
Calcium	2,630	3,920	2,460	2,730	2,910	2,040	2,260
Chromium	39.6	16.3 J	44.5 J	39.8	39.7	36.4 J	34.5
Cobalt	8.2 J	3.3 J	8.1 J	9 J	9.5 J	7.8 J	7 J
Copper	17.8	5.3	19.2	19.8	20.2	9.5	16.6
Cyanide	5.9 UL	4.1 UL	5.7 UL	7.3 UL	9.6 UL	5.8 UL	5.8 UL
Iron	38,100	26,400 J	35,300 J	33,600	35,900	35,200 J	36,500
Lead	27.9 J	8.3	32.9	30.1 K	30.2 K	18.7	25.6 K
Magnesium	7,180	2,440 J	6,990 J	6,820	6,930	5,950 J	5,960
Manganese	368 K	100 J	214 J	339	358	389 J	361
Mercury	0.11 L	0.05 B	0.16 J	0.89	1.2	0.069 B	0.091 L
Nickel	17.3	5.8	18.2	19.4	19.7	14.2	16
Potassium	4,080	2,000 J	4,340 J	4,090	4,090	3,670 J	3,570
Selenium	7.7 U	0.59 B	0.8 B	8.9 U	10.3 U	0.57 B	7.1 U
Silver	1.2 J	0.11 J	0.64 J	1.2 J	1.1 J	2.1 U	0.76 J
Sodium	11,900	3,380 J	11,300 J	13,500	13,900	7,380 J	9,820
Thallium	5.5 UL	3.4 U	5 U	6.4 UL	7.3 UL	5.2 U	5.1 UL
Vanadium	48.3	18.6 J	52.7 J	57	55.2	45.4 J	41.5
Zinc	119	35.1	129	116	118	56.4	101
Acid Volatile Sulfide/Simultaneously Extractable Metals (UMOL/G)							
Acid volatile sulfide	1.7	0.96	1.4 U	7.3	15.1	3.2	2.5
Cadmium	0.0012 L	9.80E-04 J	0.0016 J	0.0025 L	8.20E-04 UL	8.40E-04 J	0.0014 L
Copper	0.063 L	0.0087 B	0.15 B	0.063 L	0.019 L	0.005 U	0.098 L
Lead	0.071 L	0.018 J	0.11 J	0.082 L	0.087 L	0.045 J	0.098 L
Mercury	3.30E-04 R	2.10E-04 U	3.20E-04 U	4.30E-04 R	4.60E-04 R	3.30E-04 U	3.20E-04 R
Nickel	0.048	0.032 J	0.12 J	0.075 J	0.061 J	0.092 J	0.075 J
SEM/AVS Ratio	0.71	0.46	NA	0.18	0.093	0.22	0.56
Silver	0.0049 B	0.0013 U	0.0019 U	0.0071 B	0.003 B	0.0018 U	0.0053 B
Zinc	1	0.38	1.3	1.1	1.2	0.55	1.1
Wet Chemistry (MG/KG)							
Total organic carbon (TOC)	63,200	25,200	53,700	66,200	NA	34,800	56,200
pH	7	7.4	6.9	7.1	NA	7.4	6.9
Grain Size (PCT)							
Coarse Sand (%)	1.2	0.7	0.2	10.4	NA	0.2	0.6
Fine Sand (%)	2.6	65	5.7	1.7	NA	2	1.7
Fines (%)	84.6	28.9	86.9	79.1	NA	93.7	92.1
GS03 Sieve 3" (75 mm)	100	100	100	100	NA	100	100
GS05 Sieve 2" (50 mm)	100	100	100	100	NA	100	100
GS06 Sieve 1.5" (37.5 mm)	100	100	100	100	NA	100	100
GS07 Sieve 1" (25.0 mm)	100	100	100	100	NA	100	100
GS08 Sieve 0.75" (19.0 mm)	100	100	100	100	NA	100	100
GS10 Sieve 0.375" (9.5 mm)	100	99.9	100	100	NA	100	100
Gravel (%)	0.00E+00	0.4	0.5	0.00E+00	NA	0.00E+00	0.00E+00
Medium Sand (%)	11.6	5.1	6.7	8.8	NA	4.2	5.5

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YNWS - Site 34
Final Sediment Raw
Analytical Data

Station ID	YSA14-SD01	YSA14-SD02	YSA14-SD03	YSA14-SD04		YSA14-SD05	YSA14-SD06
Sample ID	YSA14-SD01-1207	YSA14-SD02-1207	YSA14-SD03-1207	YSA14-SD04-1207	YSA14-SD04P-1207	YSA14-SD05-1207	YSA14-SD06-1207
Sample Date	12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	12/14/07	12/07/07
Chemical Name							
Sieve No. 004 (4.75 mm)	100	99.6	99.5	100	NA	100	100
Sieve No. 010 (2.00 mm)	98.8	99	99.2	89.6	NA	99.8	99.4
Sieve No. 020 (850 um)	88.9	96.7	95.3	81.6	NA	96.7	94.8
Sieve No. 040 (425 um)	87.3	93.9	92.6	80.8	NA	95.6	93.9
Sieve No. 060 (250 um)	86.5	72.9	90.7	80.4	NA	95	93.3
Sieve No. 100 (150 um)	85.9	43.2	89	79.7	NA	94.5	92.9
Sieve No. 140 (106 um)	86	50.4	89.4	79.8	NA	94.7	93
Sieve No. 200 (75 um)	84.6	28.9	86.9	79.1	NA	93.7	92.1

Notes:

B - Analyte not detected above the level reported in blanks
J - Analyte present, value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower
L - Analyte present, value may be biased low, actual value may be higher
MG/KG - Milligrams per kilogram
NA - Not analyzed
PCT - Percent
R - Unreliable Result
U - The material was analyed for, but not detected
UG/KG - Micrograms per kilogram
UJ - Analyte not detected, quantitation limit may be inaccurate
UL - Analyte not detected, quantitation limit is probably higher
UMOL/G - Micromoles per gram
Shading indicates detection

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YNWS - Site 34
Final Surface Water Raw
Analytical Data

Station ID	YSA14-SW01	YSA14-SW02	YSA14-SW03	YSA14-SW04				YSA14-SW05	YSA14-SW06	
Sample ID	YSA14-SW01-1207	YSA14-SW02-1207	YSA14-SW03-1207	YSA14-SW04-1207	YSA14-SW04P-1207	YSA14-SW04-0308	YSA14-SW04P-0308	YSA14-SW05-1207	YSA14-SW06-1207	YSA14-SW06-0308
Sample Date	12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	03/05/08	03/05/08	12/14/07	12/07/07	03/05/08
Chemical Name										
Volatile Organic Compounds (UG/L)										
1,1,1-Trichloroethane	10 U	10 U	10 U	1.8 J	2.3 J	NA	NA	10 U	10 U	NA
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,1-Dichloroethene	10 U	10 U	10 U	11	15	NA	NA	10 U	10 U	NA
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,2-Dibromoethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
2-Butanone	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
2-Hexanone	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Acetone	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Benzene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Bromoform	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Bromomethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Carbon disulfide	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Chloroethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Chloroform	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Chloromethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Cyclohexane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Dichlorodifluoromethane (Freon-12)	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Isopropylbenzene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Methyl acetate	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Methyl-tert-butyl ether (MTBE)	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Methylcyclohexane	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Methylene chloride	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Styrene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Toluene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Trichloroethene	10 U	10 U	10 U	33	43	NA	NA	10 U	3.8 J	NA
Trichlorofluoromethane(Freon-11)	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Xylene, total	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
cis-1,2-Dichloroethene	10 U	10 U	10 U	6.4 J	6.8 J	NA	NA	10 U	10 U	NA
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
trans-1,2-Dichloroethene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Semivolatile Organic Compounds (UG/L)										
1,1-Biphenyl	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2,2'-Oxybis(1-chloropropane)	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2,4,5-Trichlorophenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2,4,6-Trichlorophenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2,4-Dichlorophenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2,4-Dimethylphenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2,4-Dinitrophenol	49 U	49 U	49 U	48 U	49 U	NA	NA	49 U	47 U	NA
2,4-Dinitrotoluene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA

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Final Surface Water Raw
Analytical Data

Station ID	YSA14-SW01	YSA14-SW02	YSA14-SW03	YSA14-SW04				YSA14-SW05	YSA14-SW06	
Sample ID	YSA14-SW01-1207	YSA14-SW02-1207	YSA14-SW03-1207	YSA14-SW04-1207	YSA14-SW04P-1207	YSA14-SW04-0308	YSA14-SW04P-0308	YSA14-SW05-1207	YSA14-SW06-1207	YSA14-SW06-0308
Sample Date	12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	03/05/08	03/05/08	12/14/07	12/07/07	03/05/08
Chemical Name										
2,6-Dinitrotoluene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2-Chloronaphthalene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2-Chlorophenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2-Methylphenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
2-Nitroaniline	49 U	49 U	49 U	48 U	49 U	NA	NA	49 U	47 U	NA
2-Nitrophenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
3,3'-Dichlorobenzidine	20 U	19 U	19 U	19 U	20 U	NA	NA	19 U	19 U	NA
3-Nitroaniline	49 U	49 U	49 U	48 U	49 U	NA	NA	49 U	47 U	NA
4,6-Dinitro-2-methylphenol	49 U	49 U	49 U	48 U	49 U	NA	NA	49 U	47 U	NA
4-Bromophenyl-phenylether	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
4-Chloro-3-methylphenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
4-Chloroaniline	20 U	19 U	19 U	19 U	20 U	NA	NA	19 U	19 U	NA
4-Chlorophenyl-phenylether	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
4-Methylphenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
4-Nitroaniline	49 U	49 U	49 U	48 U	49 U	NA	NA	49 U	47 U	NA
4-Nitrophenol	49 U	49 U	49 U	48 U	49 U	NA	NA	49 U	47 U	NA
Acenaphthene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Acenaphthylene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Acetophenone	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Anthracene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Atrazine	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Benzaldehyde	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Benzo(a)anthracene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Benzo(a)pyrene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Benzo(b)fluoranthene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Benzo(g,h,i)perylene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Benzo(k)fluoranthene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Butylbenzylphthalate	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Caprolactam	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Carbazole	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Chrysene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Di-n-butylphthalate	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Di-n-octylphthalate	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Dibenz(a,h)anthracene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Dibenzofuran	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Diethylphthalate	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Dimethyl phthalate	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Fluoranthene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Fluorene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Hexachlorobenzene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Hexachlorobutadiene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Hexachlorocyclopentadiene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Hexachloroethane	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Indeno(1,2,3-cd)pyrene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Isophorone	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Naphthalene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Nitrobenzene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Pentachlorophenol	49 U	49 U	49 U	48 U	49 U	NA	NA	49 U	47 U	NA
Phenanthrene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Phenol	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Pyrene	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
bis(2-Chloroethoxy)methane	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
bis(2-Chloroethyl)ether	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
bis(2-Ethylhexyl)phthalate	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
n-Nitroso-di-n-propylamine	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
n-Nitrosodiphenylamine	9.8 U	9.7 U	9.7 U	9.6 U	9.8 U	NA	NA	9.7 U	9.4 U	NA
Pesticide/Polychlorinated Biphenyls (UG/L)										
4,4'-DDD	0.099 U	0.094 U	0.099 U	0.097 U	0.097 U	NA	NA	0.094 U	0.1 U	NA
4,4'-DDE	0.099 U	0.094 U	0.099 U	0.097 U	0.097 U	NA	NA	0.094 U	0.1 U	NA

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Final Surface Water Raw
Analytical Data

Station ID	YSA14-SW01	YSA14-SW02	YSA14-SW03	YSA14-SW04				YSA14-SW05	YSA14-SW06	
Sample ID	YSA14-SW01-1207	YSA14-SW02-1207	YSA14-SW03-1207	YSA14-SW04-1207	YSA14-SW04P-1207	YSA14-SW04-0308	YSA14-SW04P-0308	YSA14-SW05-1207	YSA14-SW06-1207	YSA14-SW06-0308
Sample Date	12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	03/05/08	03/05/08	12/14/07	12/07/07	03/05/08
Chemical Name										
4,4'-DDT	0.099 U	0.094 U	0.099 U	0.097 U	0.097 U	NA	NA	0.094 U	0.1 U	NA
Aldrin	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
Aroclor-1016	0.99 U	0.94 U	0.99 U	0.97 U	0.97 U	NA	NA	0.94 U	1 U	NA
Aroclor-1221	2 U	1.9 U	2 U	1.9 U	1.9 U	NA	NA	1.9 U	2 U	NA
Aroclor-1232	0.99 U	0.94 U	0.99 U	0.97 U	0.97 U	NA	NA	0.94 U	1 U	NA
Aroclor-1242	0.99 U	0.94 U	0.99 U	0.97 U	0.97 U	NA	NA	0.94 U	1 U	NA
Aroclor-1248	0.99 U	0.94 U	0.99 U	0.97 U	0.97 U	NA	NA	0.94 U	1 U	NA
Aroclor-1254	0.99 U	0.94 U	0.99 U	0.97 U	0.97 U	NA	NA	0.94 U	1 U	NA
Aroclor-1260	0.99 U	0.94 U	0.99 U	0.97 U	0.97 U	NA	NA	0.94 U	1 U	NA
Dieldrin	0.099 U	0.094 U	0.099 U	0.097 U	0.097 U	NA	NA	0.094 U	0.1 U	NA
Endosulfan I	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
Endosulfan II	0.099 U	0.094 U	0.099 U	0.097 U	0.097 U	NA	NA	0.094 U	0.1 U	NA
Endosulfan sulfate	0.099 U	0.094 U	0.099 U	0.097 U	0.097 U	NA	NA	0.094 U	0.1 U	NA
Endrin	0.099 U	0.094 U	0.099 U	0.097 U	0.097 U	NA	NA	0.094 U	0.1 U	NA
Endrin aldehyde	0.099 U	0.094 U	0.099 U	0.097 U	0.097 U	NA	NA	0.094 U	0.1 U	NA
Endrin ketone	0.099 U	0.094 U	0.099 U	0.097 U	0.097 U	NA	NA	0.094 U	0.1 U	NA
Heptachlor	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
Heptachlor epoxide	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
Methoxychlor	0.5 U	0.47 U	0.5 U	0.48 U	0.48 U	NA	NA	0.47 U	0.5 U	NA
Toxaphene	5 U	4.7 U	5 U	4.8 U	4.8 U	NA	NA	4.7 U	5 U	NA
alpha-BHC	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
alpha-Chlordane	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
beta-BHC	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
delta-BHC	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
gamma-BHC (Lindane)	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
gamma-Chlordane	0.05 U	0.047 U	0.05 U	0.048 U	0.048 U	NA	NA	0.047 U	0.05 U	NA
Explosives (UG/L)										
1,3,5-Trinitrobenzene	0.099 U	0.099 U	0.1 U	NA	NA	0.099 U	0.096 U	0.098 U	NA	0.097 U
1,3-Dinitrobenzene	0.15 U	0.15 U	0.15 U	NA	NA	0.15 U	0.14 U	0.15 U	NA	0.15 U
2,4,6-Trinitrotoluene	0.15 U	0.15 U	0.15 U	NA	NA	0.15 U	0.14 U	0.15 U	NA	0.15 U
2,4-Dinitrotoluene	0.15 U	0.15 U	0.15 U	NA	NA	0.15 U	0.14 U	0.15 U	NA	0.15 U
2,6-Dinitrotoluene	0.15 U	0.15 U	0.15 U	NA	NA	0.15 U	0.14 U	0.15 U	NA	0.15 U
2-Amino-4,6-dinitrotoluene	0.3 U	0.3 U	0.3 U	NA	NA	0.3 U	0.29 U	0.29 U	NA	0.22 J
2-Nitrotoluene	0.5 U	0.5 U	0.5 U	NA	NA	0.5 U	0.48 U	0.49 U	NA	0.48 U
3,5-Dinitroaniline	0.99 U	0.99 U	1 U	NA	NA	0.99 U	0.96 U	0.98 U	NA	0.97 U
3-Nitrotoluene	0.5 U	0.5 U	0.5 U	NA	NA	0.5 U	0.48 U	0.49 U	NA	0.48 U
4-Amino-2,6-dinitrotoluene	0.15 U	0.15 U	0.15 U	NA	NA	0.15 U	0.14 U	0.15 U	NA	0.15 U
4-Nitrotoluene	0.5 U	0.5 U	0.5 U	NA	NA	0.5 U	0.48 U	0.49 U	NA	0.48 U
HMX	0.15 U	0.15 U	0.15 U	NA	NA	2.6 K	4.9 K	0.15 U	NA	0.26
Nitrobenzene	0.15 U	0.05 J	0.15 U	NA	NA	0.15 U	0.14 U	0.15 U	NA	0.15 U
Nitroglycerin	0.99 U	0.99 U	1 U	NA	NA	0.99 U	0.96 U	0.98 U	NA	0.97 U
Nitroguanidine	NA	NA	NA	20 U	20 U	NA	NA	NA	20 U	NA
PETN	0.99 U	0.99 U	1 U	NA	NA	0.99 U	0.96 U	0.98 U	NA	0.97 U
RDX	0.25 U	0.25 U	0.25 U	NA	NA	1.1	1.1	0.24 U	NA	0.3
Tetryl	0.15 U	0.15 U	0.15 U	NA	NA	0.15 U	0.14 U	0.15 U	NA	0.15 U
Total Metals (UG/L)										
Aluminum	586	1,170	443	2,120 K	2,520 K	NA	NA	460	622 K	NA
Antimony	60 U	60 U	60 U	60 U	60 U	NA	NA	60 U	60 U	NA
Arsenic	10 U	5.6 B	3.8 B	5.1 J	7.9 J	NA	NA	4.6 B	10 U	NA
Barium	37.9 J	33.1 J	34.4 J	41.5 J	42.8 J	NA	NA	36.2 J	31.9 J	NA
Beryllium	5 U	5 U	5 U	5 U	5 U	NA	NA	0.16 J	5 U	NA
Cadmium	0.75 B	0.86 B	1 B	0.84 J	0.64 J	NA	NA	1 B	0.78 J	NA
Calcium	209,000	215,000	232,000	224,000	230,000	NA	NA	223,000	151,000	NA
Chromium	0.74 J	1.5 B	0.42 B	3.4 J	3.8 J	NA	NA	0.64 B	1 J	NA
Cobalt	50 U	50 U	50 U	50 U	50 U	NA	NA	50 U	50 U	NA
Copper	25 U	25 U	25 U	3.3 L	25 UL	NA	NA	25 U	25 UL	NA
Cyanide	10 UL	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Iron	391	1,290	410	2,640 K	2,880 K	NA	NA	430	805 K	NA

CTO-195
YNWS - Site 34
Final Surface Water Raw
Analytical Data

Station ID	YSA14-SW01	YSA14-SW02	YSA14-SW03	YSA14-SW04				YSA14-SW05	YSA14-SW06	
Sample ID	YSA14-SW01-1207	YSA14-SW02-1207	YSA14-SW03-1207	YSA14-SW04-1207	YSA14-SW04P-1207	YSA14-SW04-0308	YSA14-SW04P-0308	YSA14-SW05-1207	YSA14-SW06-1207	YSA14-SW06-0308
Sample Date	12/10/07	12/14/07	12/14/07	12/07/07	12/07/07	03/05/08	03/05/08	12/14/07	12/07/07	03/05/08
Chemical Name										
Lead	10 U	50 U	50 U	6.5 B	3.3 B	NA	NA	50 U	10 U	NA
Magnesium	566,000	628,000	685,000	573,000	604,000	NA	NA	632,000	297,000	NA
Manganese	67.6	54	33.5	116	94.4	NA	NA	54.2	104	NA
Mercury	0.2 UL	0.2 UL	0.2 UL	0.031 L	0.044 L	NA	NA	0.2 UL	0.2 UL	NA
Nickel	1.5 B	1.3 J	40 U	2.6 J	3.3 J	NA	NA	40 U	1.1 J	NA
Potassium	162,000 J	208,000 J	235,000 J	176,000	184,000	NA	NA	206,000 J	89,100	NA
Selenium	35 UL	35 U	3.4 J	35 UL	35 UL	NA	NA	35 U	35 UL	NA
Silver	10 U	10 U	10 U	10 U	10 U	NA	NA	1.2 J	10 U	NA
Sodium	4,540,000	5,790,000	6,360,000	4,910,000	4,980,000	NA	NA	5,770,000	2,410,000	NA
Thallium	8 B	125 UL	125 UL	25 U	25 U	NA	NA	125 UL	25 U	NA
Vanadium	50 U	50 U	50 U	3.7 J	4.2 J	NA	NA	50 U	50 U	NA
Zinc	60 U	60 U	60 U	60 U	60 U	NA	NA	60 U	60 U	NA
Dissolved Metals (UG/L)										
Aluminum	317	132 J	151 J	106 J	106 J	NA	NA	142 J	200 U	NA
Antimony	60 U	60 U	60 U	60 U	60 U	NA	NA	60 U	60 U	NA
Arsenic	5 J	3.8 B	3.6 B	4.7 K	3.9 K	NA	NA	10 U	10 U	NA
Barium	33.9 J	32.7 J	30.8 J	35.6 J	38 J	NA	NA	34.5 J	32.4 J	NA
Beryllium	5 U	5 U	5 U	5 U	5 U	NA	NA	5 U	5 U	NA
Cadmium	0.71 B	0.84 B	0.93 B	0.55 J	0.77 J	NA	NA	0.87 B	0.47 J	NA
Calcium	206,000	224,000	226,000	198,000	220,000	NA	NA	214,000	155,000	NA
Chromium	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Cobalt	50 U	50 U	50 U	50 U	50 U	NA	NA	50 U	50 U	NA
Copper	3.2 J	25 U	25 U	4 L	25 UL	NA	NA	25 U	25 UL	NA
Iron	42.7 J	30.7 B	40.7 B	85 K	70.2 B	NA	NA	38.8 B	49.4 B	NA
Lead	10 U	50 U	50 U	10 U	10 U	NA	NA	50 U	10 U	NA
Magnesium	554,000	654,000	667,000	464,000	548,000	NA	NA	605,000	293,000	NA
Manganese	61.9	30.8	24.2	93.1 K	79.9 K	NA	NA	45.1	103 K	NA
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	NA	NA	0.2 UL	0.2 UL	NA
Nickel	40 U	1.4 J	40 U	1 J	1.4 J	NA	NA	0.93 J	0.99 J	NA
Potassium	160,000 J	222,000 J	220,000 J	147,000	169,000	NA	NA	198,000 J	89,000	NA
Selenium	35 UL	35 U	35 U	35 UL	35 UL	NA	NA	35 U	35 UL	NA
Silver	10 U	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	NA
Sodium	4,460,000	6,090,000	6,120,000	3,910,000	4,660,000	NA	NA	5,550,000	2,470,000	NA
Thallium	4.9 B	125 UL	125 UL	25 U	25 U	NA	NA	125 UL	25 U	NA
Vanadium	50 U	50 U	50 U	50 U	50 U	NA	NA	50 U	50 U	NA
Zinc	60 U	60 U	60 U	60 U	60 U	NA	NA	60 U	60 U	NA
Wet Chemistry (MG/L)										
Alkalinity	160	140	130	170	NA	NA	NA	150	190	NA

Notes:

B - Analyte not detected above the level reported in blanks

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high, actual value may be lower

L - Analyte present, value may be biased low, actual value may be higher

MG/L - Milligrams per liter

NA - Not analyzed

U - The material was analyed for, but not detected

UG/L - Micrograms per liter

UL - Analyte not detected, quantitation limit is probably higher

Shading indicates detection

Appendix D
Yorktown - Background
Final Surface Water Raw Analytical Results
Naval Weapons Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SW01		YBKG-SW02	YBKG-SW03	YBKG-SW04	YBKG-SW05	YBKG-SW06
Sample ID	YBKG-SW01-1207	YBKG-SW01P-1207	YBKG-SW02-1207	YBKG-SW03-1207	YBKG-SW04-1207	YBKG-SW05-1207	YBKG-SW06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Volatile Organic Compounds (UG/L)							
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane (Freon-12)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl acetate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-tert-butyl ether (MTBE)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylcyclohexane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane(Freon-11)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene, total	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Appendix D
Yorktown - Background
Final Surface Water Raw Analytical Results
Naval Weapons Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SW01		YBKG-SW02	YBKG-SW03	YBKG-SW04	YBKG-SW05	YBKG-SW06
Sample ID	YBKG-SW01-1207	YBKG-SW01P-1207	YBKG-SW02-1207	YBKG-SW03-1207	YBKG-SW04-1207	YBKG-SW05-1207	YBKG-SW06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Semivolatile Organic Compounds (UG/L)							
1,1-Biphenyl	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2,2'-Oxybis(1-chloropropane)	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4,5-Trichlorophenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4,6-Trichlorophenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4-Dichlorophenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4-Dimethylphenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2,4-Dinitrophenol	48 U	47 U	49 U	49 U	49 U	49 U	49 U
2,4-Dinitrotoluene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2,6-Dinitrotoluene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2-Chloronaphthalene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2-Chlorophenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2-Methylphenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
2-Nitroaniline	48 U	47 U	49 U	49 U	49 U	49 U	49 U
2-Nitrophenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
3,3'-Dichlorobenzidine	19 U	19 U	19 U	19 U	19 U	19 U	19 U
3-Nitroaniline	48 U	47 U	49 U	49 U	49 U	49 U	49 U
4,6-Dinitro-2-methylphenol	48 U	47 U	49 U	49 U	49 U	49 U	49 U
4-Bromophenyl-phenylether	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
4-Chloro-3-methylphenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
4-Chloroaniline	19 U	19 U	19 U	19 U	19 U	19 U	19 U
4-Chlorophenyl-phenylether	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
4-Methylphenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
4-Nitroaniline	48 U	47 U	49 U	49 U	49 U	49 U	49 U
4-Nitrophenol	48 U	47 U	49 U	49 U	49 U	49 U	49 U
Acenaphthene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Acenaphthylene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Acetophenone	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Anthracene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Atrazine	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzaldehyde	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(a)anthracene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(a)pyrene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(b)fluoranthene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(g,h,i)perylene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Benzo(k)fluoranthene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Butylbenzylphthalate	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Caprolactam	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Carbazole	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Chrysene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Di-n-butylphthalate	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Di-n-octylphthalate	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Dibenz(a,h)anthracene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Dibenzofuran	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Diethylphthalate	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Dimethyl phthalate	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Fluoranthene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Fluorene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Hexachlorobenzene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Hexachlorobutadiene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Hexachlorocyclopentadiene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Hexachloroethane	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Indeno(1,2,3-cd)pyrene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U

Appendix D
Yorktown - Background
Final Surface Water Raw Analytical Results
Naval Weapons Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SW01		YBKG-SW02	YBKG-SW03	YBKG-SW04	YBKG-SW05	YBKG-SW06
Sample ID	YBKG-SW01-1207	YBKG-SW01P-1207	YBKG-SW02-1207	YBKG-SW03-1207	YBKG-SW04-1207	YBKG-SW05-1207	YBKG-SW06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Isophorone	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Naphthalene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Nitrobenzene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Pentachlorophenol	48 U	47 U	49 U	49 U	49 U	49 U	49 U
Phenanthrene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Phenol	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Pyrene	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
bis(2-Chloroethoxy)methane	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
bis(2-Chloroethyl)ether	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
bis(2-Ethylhexyl)phthalate	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
n-Nitroso-di-n-propylamine	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
n-Nitrosodiphenylamine	9.6 U	9.4 U	9.7 U	9.7 U	9.7 U	9.7 U	9.7 U
Pesticide/Polychlorinated Biphenyls (UG/L)							
4,4'-DDD	0.095 U	0.095 U	0.099 U	0.094 U	0.1 U	0.1 U	0.095 U
4,4'-DDE	0.095 U	0.095 U	0.099 U	0.094 U	0.1 U	0.1 U	0.095 U
4,4'-DDT	0.095 U	0.095 U	0.099 U	0.094 U	0.1 U	0.1 U	0.095 U
Aldrin	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
Aroclor-1016	0.95 U	0.95 U	0.99 U	0.94 U	1 U	1 U	0.95 U
Aroclor-1221	1.9 U	1.9 U	2 U	1.9 U	2 U	2 U	1.9 U
Aroclor-1232	0.95 U	0.95 U	0.99 U	0.94 U	1 U	1 U	0.95 U
Aroclor-1242	0.95 U	0.95 U	0.99 U	0.94 U	1 U	1 U	0.95 U
Aroclor-1248	0.95 U	0.95 U	0.99 U	0.94 U	1 U	1 U	0.95 U
Aroclor-1254	0.95 U	0.95 U	0.99 U	0.94 U	1 U	1 U	0.95 U
Aroclor-1260	0.95 U	0.95 U	0.99 U	0.94 U	1 U	1 U	0.95 U
Dieldrin	0.095 U	0.095 U	0.099 U	0.094 U	0.1 U	0.1 U	0.095 U
Endosulfan I	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
Endosulfan II	0.095 U	0.095 U	0.099 U	0.094 U	0.1 U	0.1 U	0.095 U
Endosulfan sulfate	0.095 U	0.095 U	0.099 U	0.094 U	0.1 U	0.1 U	0.095 U
Endrin	0.095 U	0.095 U	0.099 U	0.094 U	0.1 U	0.1 U	0.095 U
Endrin aldehyde	0.095 U	0.095 U	0.099 U	0.094 U	0.1 U	0.1 U	0.095 U
Endrin ketone	0.095 U	0.095 U	0.099 U	0.094 U	0.1 U	0.1 U	0.095 U
Heptachlor	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
Heptachlor epoxide	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
Methoxychlor	0.48 U	0.48 U	0.5 U	0.47 U	0.5 U	0.5 U	0.48 U
Toxaphene	4.8 U	4.8 U	5 U	4.7 U	5 U	5 U	4.8 U
alpha-BHC	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
alpha-Chlordane	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
beta-BHC	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
delta-BHC	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
gamma-BHC (Lindane)	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
gamma-Chlordane	0.048 U	0.048 U	0.05 U	0.047 U	0.05 U	0.05 U	0.048 U
Explosives (UG/L)							
1,3,5-Trinitrobenzene	0.098 U	0.097 U	0.1 U	0.1 U	0.095 U	0.096 U	0.1 U
1,3-Dinitrobenzene	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.16 U
2,4,6-Trinitrotoluene	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.16 U
2,4-Dinitrotoluene	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.16 U
2,6-Dinitrotoluene	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.16 U
2-Amino-4,6-dinitrotoluene	0.29 U	0.29 U	0.3 U	0.3 U	0.28 U	0.29 U	0.31 U
2-Nitrotoluene	0.49 U	0.48 U	0.5 U	0.5 U	0.48 U	0.48 U	0.52 U
3,5-Dinitroaniline	0.98 U	0.97 U	1 U	1 U	0.95 U	0.96 U	1 U
3-Nitrotoluene	0.49 U	0.48 U	0.5 U	0.5 U	0.48 U	0.48 U	0.52 U

Appendix D
Yorktown - Background
Final Surface Water Raw Analytical Results
Naval Weapons Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SW01		YBKG-SW02	YBKG-SW03	YBKG-SW04	YBKG-SW05	YBKG-SW06
Sample ID	YBKG-SW01-1207	YBKG-SW01P-1207	YBKG-SW02-1207	YBKG-SW03-1207	YBKG-SW04-1207	YBKG-SW05-1207	YBKG-SW06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
4-Amino-2,6-dinitrotoluene	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.16 U
4-Nitrotoluene	0.49 U	0.48 U	0.5 U	0.5 U	0.48 U	0.48 U	0.52 U
HMX	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.16 U
Nitrobenzene	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.16 U
Nitroglycerin	0.98 U	0.97 U	1 U	1 U	0.95 U	0.96 U	1 U
PETN	0.98 U	0.97 U	1 U	1 U	0.95 U	0.96 U	1 U
RDX	0.24 U	0.24 U	0.25 U	0.25 U	0.24 U	0.24 U	0.26 U
Tetryl	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.16 U
Total Metals (UG/L)							
Aluminum	1,480	1,220	411	536	809	677	533
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	10 U	3.6 J	5.8 B	10 U	4.3 B	4.1 B	3.8 B
Barium	34 J	34.6 J	28.9 J	33.5 J	33.6 J	35.4 J	35.5 J
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.67 B	0.77 B	0.92 B	0.78 B	0.66 J	0.86 J	0.86 B
Calcium	117,000	116,000	216,000	225,000	232,000	218,000	214,000
Chromium	2.2 J	1.8 J	0.39 B	0.41 B	0.84 B	0.62 B	0.69 B
Cobalt	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Copper	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Cyanide	10 UL	10 UL	10 U	10 U	10 UL	10 UL	10 U
Iron	1,680	1,340	385	510	598	511	570
Lead	10 U	10 U	50 U	50 U	10 U	10 U	13.7 J
Magnesium	165,000	164,000	636,000	656,000	665,000	601,000	615,000
Manganese	136	128	34.6	38.2	45.1	53.3	53.8
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL
Nickel	1.1 B	0.92 B	40 U	1 J	40 U	40 U	0.87 J
Potassium	54,900 J	54,600 J	212,000 J	233,000 J	213,000 J	181,000 J	209,000 J
Selenium	35 UL	35 UL	35 U	3.3 J	35 UL	35 UL	4 J
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Sodium	1,380,000	1,380,000	5,980,000	6,390,000	6,000,000	4,940,000	5,850,000
Thallium	3.2 B	4.3 B	125 UL	125 UL	5 B	5 B	125 UL
Vanadium	2.4 J	1.3 J	50 U	50 U	50 U	50 U	50 U
Zinc	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Dissolved Metals (UG/L)							
Aluminum	188 J	185 J	146 B	162 B	327 K	300 K	154 B
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	10 U	10 U	10 U	5 B	5.5 B	10 U	4.9 B
Barium	29.7 J	27.6 J	32.8 J	35.9 J	31.8 J	30.8 J	33 J
Beryllium	5 U	0.13 J	5 U	5 U	5 U	5 U	5 U
Cadmium	0.53 B	0.68 B	0.72 B	1 B	0.99 J	0.67 J	0.96 B
Calcium	107,000	106,000	228,000	226,000	235,000	217,000	217,000
Chromium	0.44 J	0.59 J	10 U	10 U	0.39 B	10 U	10 U
Cobalt	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Copper	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Iron	30.8 J	42.9 J	58.6 B	42.4 B	78.6 K	37.9 K	47.8 B
Lead	10 U	10 U	14.9 J	50 U	10 U	10 U	50 U
Magnesium	134,000	131,000	668,000	661,000	665,000	594,000	623,000
Manganese	127	126	28.4	26.5	34.8	42.7	32.2
Mercury	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL	0.2 UL
Nickel	1.4 B	1.9 B	40 U	40 U	40 U	40 U	0.89 J
Potassium	45,300 J	44,600 J	229,000 J	224,000 J	206,000 J	183,000 J	209,000 J

Appendix D
Yorktown - Background
Final Surface Water Raw Analytical Results
Naval Weapons Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SW01		YBKG-SW02	YBKG-SW03	YBKG-SW04	YBKG-SW05	YBKG-SW06
Sample ID	YBKG-SW01-1207	YBKG-SW01P-1207	YBKG-SW02-1207	YBKG-SW03-1207	YBKG-SW04-1207	YBKG-SW05-1207	YBKG-SW06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Selenium	35 UL	35 UL	3.6 J	35 U	35 UL	35 UL	35 U
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Sodium	1,170,000	1,150,000	6,290,000	6,240,000	5,990,000	5,370,000	5,930,000
Thallium	4.8 B	5.6 B	125 UL	125 UL	5.7 B	4.2 B	125 UL
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	11.8 J	9.3 J	60 U	60 U	60 U	60 U	60 U
Wet Chemistry (MG/L)							
Alkalinity	200	NA	140	130	140	140	140

Notes:

B - Analyte not detected above the level reported in blanks

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high, actual value may be lower

MG/L - Milligrams per liter

NA - Not analyzed

U - The material was analyed for, but not detected

UG/L - Micrograms per liter

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

Appendix D
Yorktown - Background
Final Sediment Raw Analytical Results
Naval Weapon Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SD01		YBKG-SD02	YBKG-SD03	YBKG-SD04	YBKG-SD05	YBKG-SD06
Sample ID	YBKG-SD01-1207	YBKG-SD01P-1207	YBKG-SD02-1207	YBKG-SD03-1207	YBKG-SD04-1207	YBKG-SD05-1207	YBKG-SD06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Volatile Organic Compounds (UG/KG)							
1,1,1-Trichloroethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,1,2,2-Tetrachloroethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,1,2-Trichloroethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,1-Dichloroethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,1-Dichloroethene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,2,4-Trichlorobenzene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,2-Dibromo-3-chloropropane	24 UJ	21 UJ	27 U	29 U	28 UJ	26 UJ	28 U
1,2-Dibromoethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,2-Dichlorobenzene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,2-Dichloroethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,2-Dichloropropane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,3-Dichlorobenzene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
1,4-Dichlorobenzene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
2-Butanone	24 U	21 U	27 U	29 U	28 U	26 U	28 U
2-Hexanone	24 U	21 U	27 U	29 U	28 U	26 U	28 U
4-Methyl-2-pentanone	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Acetone	24 U	21 U	27 U	29 U	28 U	26 U	39
Benzene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Bromodichloromethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Bromoform	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Bromomethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Carbon disulfide	24 U	21 U	27 U	29 U	28 U	26 U	13 J
Carbon tetrachloride	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Chlorobenzene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Chloroethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Chloroform	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Chloromethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Cyclohexane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Dibromochloromethane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Dichlorodifluoromethane (Freon-12)	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Ethylbenzene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Isopropylbenzene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Methyl acetate	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Methyl-tert-butyl ether (MTBE)	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Methylcyclohexane	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Methylene chloride	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Styrene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Tetrachloroethene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Toluene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Trichloroethene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Trichlorofluoromethane(Freon-11)	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Vinyl chloride	24 U	21 U	27 U	29 U	28 U	26 U	28 U
Xylene, total	24 U	21 U	27 U	29 U	28 U	26 U	28 U
cis-1,2-Dichloroethene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
cis-1,3-Dichloropropene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
trans-1,2-Dichloroethene	24 U	21 U	27 U	29 U	28 U	26 U	28 U
trans-1,3-Dichloropropene	24 U	21 U	27 U	29 U	28 U	26 U	28 U

Appendix D
Yorktown - Background
Final Sediment Raw Analytical Results
Naval Weapon Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SD01		YBKG-SD02	YBKG-SD03	YBKG-SD04	YBKG-SD05	YBKG-SD06
Sample ID	YBKG-SD01-1207	YBKG-SD01P-1207	YBKG-SD02-1207	YBKG-SD03-1207	YBKG-SD04-1207	YBKG-SD05-1207	YBKG-SD06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Semivolatile Organic Compounds (UG/KG)							
1,1-Biphenyl	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2,2'-Oxybis(1-chloropropane)	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2,4,5-Trichlorophenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2,4,6-Trichlorophenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2,4-Dichlorophenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2,4-Dimethylphenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2,4-Dinitrophenol	8,100 U	7,400 U	9,200 U	9,600 U	9,500 U	9,300 U	9,300 U
2,4-Dinitrotoluene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2,6-Dinitrotoluene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2-Chloronaphthalene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2-Chlorophenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2-Methylnaphthalene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2-Methylphenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
2-Nitroaniline	8,100 U	7,400 U	9,200 U	9,600 U	9,500 U	9,300 U	9,300 U
2-Nitrophenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
3,3'-Dichlorobenzidine	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
3-Nitroaniline	8,100 U	7,400 U	9,200 U	9,600 U	9,500 U	9,300 U	9,300 U
4,6-Dinitro-2-methylphenol	8,100 U	7,400 U	9,200 U	9,600 U	9,500 U	9,300 U	9,300 U
4-Bromophenyl-phenylether	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
4-Chloro-3-methylphenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
4-Chloroaniline	3,100 U	2,900 U	3,600 U	3,700 U	3,700 U	3,600 U	3,600 U
4-Chlorophenyl-phenylether	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
4-Methylphenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
4-Nitroaniline	8,100 U	7,400 U	9,200 U	9,600 U	9,500 U	9,300 U	9,300 U
4-Nitrophenol	8,100 U	7,400 U	9,200 U	9,600 U	9,500 U	9,300 U	9,300 U
Acenaphthene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Acenaphthylene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Acetophenone	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Anthracene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Atrazine	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Benzaldehyde	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Benzo(a)anthracene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Benzo(a)pyrene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Benzo(b)fluoranthene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Benzo(g,h,i)perylene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Benzo(k)fluoranthene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Butylbenzylphthalate	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Caprolactam	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Carbazole	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Chrysene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Di-n-butylphthalate	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Di-n-octylphthalate	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Dibenz(a,h)anthracene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Dibenzofuran	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Diethylphthalate	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Dimethyl phthalate	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Fluoranthene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Fluorene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Hexachlorobenzene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Hexachlorobutadiene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U

Appendix D
Yorktown - Background
Final Sediment Raw Analytical Results
Naval Weapon Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SD01		YBKG-SD02	YBKG-SD03	YBKG-SD04	YBKG-SD05	YBKG-SD06
Sample ID	YBKG-SD01-1207	YBKG-SD01P-1207	YBKG-SD02-1207	YBKG-SD03-1207	YBKG-SD04-1207	YBKG-SD05-1207	YBKG-SD06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Hexachlorocyclopentadiene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Hexachloroethane	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Indeno(1,2,3-cd)pyrene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Isophorone	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Naphthalene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Nitrobenzene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Pentachlorophenol	8,100 U	7,400 U	9,200 U	9,600 U	9,500 U	9,300 U	9,300 U
Phenanthrene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Phenol	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Pyrene	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
bis(2-Chloroethoxy)methane	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
bis(2-Chloroethyl)ether	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
bis(2-Ethylhexyl)phthalate	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
n-Nitroso-di-n-propylamine	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
n-Nitrosodiphenylamine	1,600 U	1,400 U	1,800 U	1,900 U	1,800 U	1,800 U	1,800 U
Pesticide/Polychlorinated Biphenyls (UG/KG)							
4,4'-DDD	7.9 U	7.2 U	8.9 U	9.4 U	9.1 U	9.2 U	9.2 U
4,4'-DDE	7.9 U	7.2 U	8.9 U	9.4 U	9.1 U	9.2 U	9.2 U
4,4'-DDT	7.9 U	7.2 U	8.9 U	9.4 U	9.1 U	9.2 U	9.2 U
Aldrin	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
Aroclor-1016	79 U	72 U	89 U	94 U	91 U	92 U	92 U
Aroclor-1221	160 U	150 U	180 U	190 U	180 U	190 U	190 U
Aroclor-1232	79 U	72 U	89 U	94 U	91 U	92 U	92 U
Aroclor-1242	79 U	72 U	89 U	94 U	91 U	92 U	92 U
Aroclor-1248	79 U	72 U	89 U	94 U	91 U	92 U	92 U
Aroclor-1254	79 U	72 U	89 U	94 U	91 U	92 U	92 U
Aroclor-1260	79 U	72 U	89 U	94 U	91 U	92 U	92 U
Dieldrin	7.9 U	7.2 U	8.9 U	9.4 U	9.1 U	9.2 U	9.2 U
Endosulfan I	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
Endosulfan II	7.9 U	7.2 U	8.9 U	9.4 U	9.1 U	9.2 U	9.2 U
Endosulfan sulfate	7.9 U	7.2 U	8.9 U	9.4 U	9.1 U	9.2 U	9.2 U
Endrin	7.9 U	7.2 U	8.9 U	9.4 U	9.1 U	9.2 U	9.2 U
Endrin aldehyde	7.9 U	7.2 U	8.9 U	9.4 U	9.1 U	9.2 U	9.2 U
Endrin ketone	7.9 U	7.2 U	8.9 U	9.4 U	9.1 U	9.2 U	9.2 U
Heptachlor	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
Heptachlor epoxide	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
Methoxychlor	40 U	37 U	46 U	49 U	47 U	47 U	47 U
Toxaphene	400 U	370 U	460 U	490 U	470 U	470 U	470 U
alpha-BHC	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
alpha-Chlordane	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
beta-BHC	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
delta-BHC	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
gamma-BHC (Lindane)	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
gamma-Chlordane	4 U	3.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
Explosives (UG/KG)							
1,3,5-Trinitrobenzene	250 U	250 U	250 U	250 U	250 U	250 U	250 U
1,3-Dinitrobenzene	250 U	250 U	250 U	250 U	250 U	250 U	250 U
2,4,6-Trinitrotoluene	250 U	250 U	250 U	250 U	250 U	250 U	250 U
2,4-Dinitrotoluene	250 U	250 U	250 U	250 U	250 U	250 U	250 U

Appendix D
Yorktown - Background
Final Sediment Raw Analytical Results
Naval Weapon Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SD01		YBKG-SD02	YBKG-SD03	YBKG-SD04	YBKG-SD05	YBKG-SD06
Sample ID	YBKG-SD01-1207	YBKG-SD01P-1207	YBKG-SD02-1207	YBKG-SD03-1207	YBKG-SD04-1207	YBKG-SD05-1207	YBKG-SD06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
2,6-Dinitrotoluene	250 U	250 U	250 U	250 U	250 U	250 U	250 U
2-Amino-4,6-dinitrotoluene	300 U	300 U	300 U	300 U	300 U	300 U	300 U
2-Nitrotoluene	250 U	250 U	250 U	250 U	250 U	250 U	250 U
3,5-Dinitroaniline	1,300 U	1,300 U	1,300 U	1,300 U	1,300 U	1,300 U	1,300 U
3-Nitrotoluene	250 U	250 U	250 U	250 U	250 U	250 U	250 U
4-Amino-2,6-dinitrotoluene	250 U	250 U	250 U	250 U	250 U	250 U	250 U
4-Nitrotoluene	500 U	500 U	500 U	500 U	500 U	500 U	500 U
HMX	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Nitrobenzene	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Nitroglycerin	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Nitroguanidine	250 U	250 U	250 U	250 U	250 U	250 U	250 U
PETN	500 U	500 U	500 U	500 U	500 U	500 U	500 U
RDX	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Tetryl	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Total Metals (MG/KG)							
Aluminum	12,500	8,640	19,300 J	20,900 J	17,900	17,600	18,800 J
Antimony	0.84 B	0.84 B	10.7 U	11.2 U	12.5 R	0.72 B	11.5 U
Arsenic	14.8	7.1	12.4	12.6	12.9	14.5	10.2
Barium	30.7 J	20.7 J	35 J	38.1 J	38 J	38.4 J	37.7 J
Beryllium	0.92 J	0.65 J	0.56 J	0.87 J	1.1	1.1	0.81 J
Cadmium	0.28 B	0.39 B	0.074 J	0.3 J	0.33 B	0.39 B	0.11 J
Calcium	1,810	2,250	1,900	2,380	2,370	2,550	2,410
Chromium	33.3	21.2	40.4 J	42.6 J	38.9	38.6	38.2 J
Cobalt	7.3 J	5.4 J	6.7 J	8.3 J	8.1 J	7.8 J	7.4 J
Copper	12.7	11.1	16.1	17.9	16.4	16.8	12.7
Cyanide	5 UL	4.7 UL	0.34 L	0.22 L	5.7 UL	6.4 UL	0.29 L
Iron	27,700	18,400	37,200 J	35,200 J	37,200	37,100	25,700 J
Lead	22.9 J	21.3 J	29.5	33	27.7 J	29.2 J	28.8
Magnesium	5,320	4,330	6,020 J	6,740 J	6,800	6,620	6,120 J
Manganese	122 K	104 K	249 J	237 J	476 K	496 K	428 J
Mercury	0.15 L	0.27	0.13 J	0.13 J	0.1 L	0.096 L	0.073 B
Nickel	13.7	10.2	14.3	17.3	16.6	16.4	15.8
Potassium	3,860	2,380	3,670 J	4,160 J	3,830	3,750	3,720 J
Selenium	6.5 U	5.4 U	1 B	0.71 B	7.3 U	7.3 U	0.78 B
Silver	10.9	6.9	0.61 J	1.4 J	0.77 J	0.94 J	0.62 J
Sodium	8,900	8,400	10,600 J	11,000 J	11,400	10,800	6,570 J
Thallium	4.6 UL	3.8 UL	4.5 U	4.7 U	5.2 UL	5.2 UL	4.8 U
Vanadium	39.8	30.2	50 J	52.1 J	46.2	47.8	46.2 J
Zinc	77.6	77.6	83.2	119	114	109	84.6
Acid Volatile Sulfide/Simultaneously Extractable Metals (UMOL/G)							
Acid volatile sulfide	3.5	3.7	1.3 U	27.9	8.7	2.6	2.3
Cadmium	0.0018 L	4.40E-04 UL	7.20E-04 J	0.0014 J	6.00E-04 UL	7.40E-04 L	9.80E-04 J
Copper	0.066 L	0.069 UL	0.14 B	0.13 B	0.079 L	0.085 L	0.02 B
Lead	0.067 L	0.069 L	0.094 J	0.091 J	0.086 L	0.08 L	0.042 J
Mercury	2.90E-04 R	2.40E-04 R	3.10E-04 U	3.20E-04 U	3.30E-04 R	3.30E-04 R	3.40E-04 U
Nickel	0.06	0.055	0.095 J	0.1 J	0.078	0.056	0.095 J
SEM/AVS Ratio	0.29	0.26	NA	0.05	0.14	0.42	0.27
Silver	0.037	0.035 L	0.0035 J	0.0019 U	0.0072 B	0.0034 B	0.0019 U
Zinc	0.75	0.71	0.87	1.1	0.96	0.89	0.47

Appendix D
Yorktown - Background
Final Sediment Raw Analytical Results
Naval Weapon Station Yorktown
Yorktown, Virginia

Station ID	YBKG-SD01		YBKG-SD02	YBKG-SD03	YBKG-SD04	YBKG-SD05	YBKG-SD06
Sample ID	YBKG-SD01-1207	YBKG-SD01P-1207	YBKG-SD02-1207	YBKG-SD03-1207	YBKG-SD04-1207	YBKG-SD05-1207	YBKG-SD06-1207
Sample Date	12/10/07	12/10/07	12/14/07	12/14/07	12/11/07	12/11/07	12/14/07
Chemical Name							
Wet Chemistry (MG/KG)							
Total organic carbon (TOC)	32,400	NA	64,700	54,200	64,100	68,400	43,700
pH	7.3	NA	6.9	6.7	7	6.7	7.3
Grain Size (PCT)							
Coarse Sand (%)	0.7	NA	0.9	1.5	1.9	1.3	0.7
Fine Sand (%)	9.1	NA	5.5	5.1	1.7	3.2	3.1
Fines (%)	77.9	NA	79.6	83.4	78.8	80.7	91.4
GS03 Sieve 3" (75 mm)	100	NA	100	100	100	100	100
GS05 Sieve 2" (50 mm)	100	NA	100	100	100	100	100
GS06 Sieve 1.5" (37.5 mm)	100	NA	100	100	100	100	100
GS07 Sieve 1" (25.0 mm)	100	NA	100	100	100	100	100
GS08 Sieve 0.75" (19.0 mm)	100	NA	100	100	100	100	100
GS10 Sieve 0.375" (9.5 mm)	100	NA	100	100	100	100	100
Gravel (%)	1.1	NA	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Medium Sand (%)	11.2	NA	14	9.9	17.7	14.8	4.7
Sieve No. 004 (4.75 mm)	98.9	NA	100	100	100	100	100
Sieve No. 010 (2.00 mm)	98.2	NA	99.1	98.5	98.1	98.7	99.3
Sieve No. 020 (850 um)	90.1	NA	89.4	92	82.4	85.9	96
Sieve No. 040 (425 um)	87	NA	85.1	88.6	80.4	83.9	94.5
Sieve No. 060 (250 um)	85	NA	82.9	86.7	79.7	83	93.5
Sieve No. 100 (150 um)	82	NA	81.3	85.2	79.3	82.2	92.6
Sieve No. 140 (106 um)	82.8	NA	81.7	85.6	79.3	82.4	92.8
Sieve No. 200 (75 um)	77.9	NA	79.6	83.4	78.8	80.7	91.4

Notes:

B - Analyte not detected above the level reported in blanks
J - Analyte present, value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower
L - Analyte present, value may be biased low, actual value may be higher
MG/KG - Milligrams per kilogram
NA - Not analyzed
PCT - Percent
R - Unreliable Result
U - The material was analyed for, but not detected
UG/KG - Micrograms per kilogram
UJ - Analyte not detected, quantitation limit may be inaccurate
UL - Analyte not detected, quantitation limit is probably higher
UMOL/G - Micromoles per gram

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

February 6, 2008

SDG# YORK04
Test America Laboratories-Savannah, Burlington, West Sacramento, and North Canton
Naval Weapons Station Yorktown

Dear Ms. Bennet,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # YORK04. The data validation was performed in accordance with the EPA CLP Statement of Work, Document OLM04.3 for volatiles, semivolatiles, and pesticides, the EPA CLP Statement of Work ILM05.3 for metals and dissolved metals, and the SW-846 Methods 8330/8332 for explosives compounds. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, as applicable (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review). The region does not have a validation document for the ILM05.3 methods or for the SW-846 methods 8330 and 8332, so method criteria were substituted but Region III qualification conventions and qualifiers were used. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	V	SV	Pest/PCB	Met	D Met	Exp	NGL	NGU
YS04-GW08A-1107	680-31661-1	water	X	X	X	X	X	X	X	X
YS04-GW08AP-1107	680-31661-2	water	X	X	X	X	X	X	X	X
YS04-GW06A-1107	680-31661-3	water	X	X	X	X	X	X	X	X
YS04-TB01-110507	680-31661-4	water	X							
YS04-GW06-1107	680-31661-5	water	X	X	X	X	X	X	X	X
YS04-EB01-110507	680-31661-6	water	X	X	X	X	X	X	X	X
YS04-GW03-1107	680-31661-7	water	X	X	X	X	X	X	X	X
YS04-GW07-1107	680-31696-1	water	X	X	X	X	X	X	X	X
YS04-GW07P-1107	680-31696-2	water	X	X	X	X	X	X	X	X
YS04-GW07A-1107	680-31696-3	water	X	X	X	X	X	X	X	X
YS04-EB01-110607	680-31696-4	water	X	X	X	X	X	X	X	X
YS04-FB01-110607	680-31696-5	water	X	X	X	X	X	X	X	X
YS04-TB01-110607	680-31696-6	water	X							
YS04-GW05-1107	680-31773-1	water	X	X	X	X	X	X	X	X
YS04-EB01-110707	680-31773-2	water	X	X	X	X	X	X	X	X
YSA14-GW01A-1107	680-31773-3	water	X			X	X	X	X	X
YSA14-GW01AP-1107	680-31773-4	water	X			X	X			
YS04-TB01-110707	680-31773-5	water	X							
YS04-GW05-1107 MS	680-31773-1MS	water	X	X	X	X	X	X	X	X
YS04-GW05-1107 MSD	680-31773-1MSD	water	X	X	X	X	X	X	X	X

The following quality control samples were provided with this SDG: samples YS04-TB01-110507, YS04-TB01-110607 and YS04-TB01-110707-trip blanks, sample YS04-FB01-110607 -field blank; samples YS04-EB01-110507, YS04-EB01-110607 and YS04-EB01-110707-equipment blanks. Field duplicates are as follows: sample YS04-GW08AP-1107-field duplicate of sample YS04-GW08A-1107; sample YS04-GW07P-1107-field duplicate of sample YS04-GW07-110; and sample YSA14-GW01AP-1107-field duplicate of sample YSA14-GW01A-1107.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times
- GC/MS Tuning *
- GC & HPLC Performance *
- Initial/Continuing Calibrations *
- CRDL Standards *
- ICSA/ICSAB Standards *
- Blanks
- Internal Standards *
- Surrogates
- Laboratory Control Samples *
- Matrix Spike Recoveries
- Matrix Duplicate RPDs *
- Serial Dilution Results *
- Field Duplicates
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds

* - indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria.

Major Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG that resulted in the rejection of data. All results rejected, R, should be considered unusable. These rejections were the result of re-extraction analyses and did not result in the loss of viable data points.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page.

VOA

Blank contamination was noted in the QC blanks associated with samples in this batch. Qualifications were added to the data.

Two samples exhibited slightly high surrogate recoveries that resulted in the qualification of the results as estimated.

SVOA

One sample required re-extraction due to low surrogate recoveries. The re-extraction of the sample exhibited surrogate recoveries within criteria and therefore was used; however, the re-extraction exceeded the holding time and required qualification of the reported results.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Pesticides

Due to a surrogate spiking error in the initial extraction procedure, several samples were re-extracted outside holding time. The re-extracted results were comparable to the original extraction and exhibited acceptable spike recoveries for the surrogate compounds. Since results were comparable the re-extraction data was rejected due to significantly exceeded holding times.

Explosives by 8330/8332

Some results were reported with P flags to indicate column quantitation %Ds greater than 40%. These results were qualified as estimated J.

Nitroguanidine by Modified 8330

No qualifications to the data were required.

Total and Dissolved Metals, Mercury & Cyanide

Blank contamination was noted in the laboratory and field QC blanks associated with the samples in this batch. Qualifications were added to the data. Specific information is provided below. Please note that field QC blanks were not flagged for laboratory blank contamination per CH2M HILL.

The MS associated with the total metals analysis exhibited a non-compliant %R for silver that was below the QC limit. All results for silver in the total metals samples were qualified as biased low L/UL.

One of the field duplicate pairs analyzed for total metals exhibited three analytes with very high RPDs. These analytes were qualified as estimated J in the field sample and duplicate.

Specific Evaluation of Data

Data Completeness

Information regarding the holding time applied for the nitroguanidine analysis was requested and received from the laboratory. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 11/05-07/07. Samples were received at the laboratory 11/06-08/07. All sample preparation and analysis was performed within Region III and/or method holding time requirements with the following exceptions.

SVOA

The re-extraction of sample YS04-GW07P-1107 exceeded the 7-day extraction holding time for waters by 7 days; therefore all results were qualified as estimated (J/UJ), qualifier code: HT.

Pesticides/PCBs

Several samples were incorrectly spiked for surrogate analysis and these exhibited very low recoveries. Therefore, the laboratory re-extracted these samples 14 to 16 days outside the 7-day extraction holding time for water samples. These re-extracted samples exhibited acceptable recoveries for all surrogate compounds. A comparison of the results in the two sets of data showed that the reported results in the RE analyses

were the same as the results reported from the original analyses of the samples. For this reason, all RE samples were rejected R with a qualifier code of RE in favor of the results reported from the original analysis of the samples.

Blanks

VOA

The associated field QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS04-TB01-110707	trichloroethene	3.1J ug/L	10 ug/L	15.5 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
YSA14-GW01A-1107, YSA-14-GW01AP-1107	trichloroethene	B	BL

SVOA

The associated method and QC blanks exhibited contamination for TICs. All B flagged TICs in the field samples are flagged B and crossed out in accordance with the Region III modifications to the National Functional Guidelines.

Total & Dissolved Metals, Mercury & Cyanide

Contamination was noted in the associated blanks and qualifications were required. Contamination and sample result qualifications are indicated in the following tables.

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBLK	beryllium	-0.234J ug/L	< 10X MDL (0.12 ug/L)	L/UL up to action level
	chromium	-0.208J ug/L	< 10X MDL (0.13 ug/L)	L/UL up to action level
	iron	-21.89J ug/L	< 10X MDL (15 ug/L)	L/UL up to action level
	nickel	-0.962J ug/L	< 10X MDL (0.84 ug/L)	L/UL up to action level
ICB	mercury	-0.043J ug/L	< 10X MDL (0.029 ug/L)	L/UL up to action level
CCB	copper	-1.373J ug/L	< 10X MDL (3.0 ug/L)	L/UL up to action level
	zinc	-0.353J ug/L	< 10X MDL (4.6 ug/L)	L/UL up to action level
YS04-EB01-110607F	chromium	0.45J ug/L	2.25 ug/L	B

Sample ID	analyte	Q Flag	Q Code
all field samples	beryllium	L/UL up to action limit	BL
all field samples	chromium	L/UL up to action limit	BL
all field samples	iron	L/UL up to action limit	BL
all field samples	nickel	L/UL up to action limit	BL
all field samples	mercury	L/UL up to action limit	BL
all field samples	copper	L/UL up to action limit	BL
all field samples	zinc	L/UL up to action limit	BL
YS04-GW07A-1107F	chromium	B	BL

Surrogates

VOA

Sample YS04-GW07A-1107 exhibited non-compliant surrogate recovery with a slightly high recovery for toluene-d8 at 117% (QC limits 88-110) and sample YS04-EB01-110607 with slightly high recovery for toluene-d8 at 116% (QC limit 88-110%) and 4-bromofluotobenzene at 119% (QC limit 86-115%). Due to these recoveries the results for these samples were qualified as estimated (J/UJ), qualifier code: SSH.

Matrix Spike Recoveries

Total & Dissolved Metals, Mercury & Cyanide

The matrix spike analysis of the sample YS04-GW05-1107 for total metals exhibited a non-compliant %R (<75% or >125%) for the analyte silver. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS22-GW05-1107	silver	all total field samples	74%	L/UL	MSL

Field Duplicates

Total & Dissolved Metals, Mercury & Cyanide

One of the field duplicate pairs submitted in this SDG exhibited non-compliant RPDs for three analytes. Specific action is noted in the following table.

FD Pair	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS04-GW07-1107, YS04-GW07P-1107	chromium iron nickel	YS04-GW07-1107, YS04-GW07P-1107	111% 96% 108%	J	FD

Identification/Quantitation

SVOA

Due to very low surrogate recoveries the initial analysis of sample YS04-GW07P-1107, the re-extracted analysis YS04-GW07P-1107RE was used and not the initial analysis.

Explosives by 8330/8332

All P flagged compounds were qualified as estimated J with a qualifier code of 2C, to indicate column quantitation %Ds greater than 40%.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q Code
YSA14-GW01A-1107, YSA-14-GW01AP-1107	trichloroethene	+	B	BL
YS04-GW07A-1107, YS04-EB01-110607	all results	+/-	J/UJ	SSH

SVOA

Sample ID	Compound	Results	Q-Flag	Q Code
YS04-GW07P-1107RE	all results	+/-	J/UJ	HT
All samples	blank contaminant TICs	+	B	BL
YS04-GW07P-1107	all results	+/-	R	RE

Pesticides/PCBs

Sample ID	Compound	Results	Q-Flag	Q Code
All RE samples	All compounds	+/-	R	RE

Explosives by 8330/8332

Sample ID	Parameter	Results	Q-Flag	Q Code
all samples	all P flagged compounds	+P	J	2C

Nitroguanidine

Sample ID	Parameter	Results	Q-Flag	Q Code
No qualifications were required				

Total & Dissolved Metals, Mercury & Cyanide

Sample ID	Analyte	Results	Q-Flag	Q Code
all field samples	beryllium	+/- up to 10X MDL	L/UL	BL
all field samples	chromium	+/- up to 10X MDL	L/UL	BL
all field samples	iron	+/- up to 10X MDL	L/UL	BL
all field samples	nickel	+/- up to 10X MDL	L/UL	BL
all field samples	mercury	+/- up to 10X MDL	L/UL	BL
all field samples	copper	+/- up to 10X MDL	L/UL	BL
all field samples	zinc	+/- up to 10X MDL	L/UL	BL
YS04-GW07A-1107F	chromium	+ up to action level	B	BL
all total field samples	silver	+/-	L/UL	MSL

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high

Method/Preparation Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.

General Abbreviations

RL	reporting limit
Q code	qualifier code
+	positive result
-	non-detect result IDL
IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High Moisture content

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

February 6, 2008

SDG# YORK05
Test America Laboratories-Savannah, West Sacramento, and North Canton
Naval Weapons Station Yorktown

Dear Ms. Bennet,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # YORK05. The data validation was performed in accordance with the EPA CLP Statement of Work, Document OLM04.3 for volatiles, the EPA CLP Statement of Work ILM05.3 for metals and dissolved metals, and the SW-846 Methods 8330/8332 for explosives compounds. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, as applicable (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review). The region does not have a validation document for the ILM05.3 methods or for the SW-846 methods 8330 and 8332, so method criteria were substituted but Region III qualification conventions and qualifiers were used. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	V	Met	D Met	Exp	NGL	NGU
YSA14-SW05-1107	680-31822-1	water	X	X	X	X	X	X
YSA14-GW05A-1107	680-31822-2	water	X	X	X	X	X	X
YSA14-EB01-110807	680-31822-3	water	X	X	X	X	X	X
YSA14-GW01-1107	680-31822-4	water	X	X	X	X	X	X
YSA14-FB01-110807	680-31822-5	water	X	X	X	X	X	X
YSA14-TB01-110807	680-31822-6	water	X					
YSA14-GW02-1107	680-31860-1	water	X	X	X	X	X	X
YSA14-EB01-110907	680-31860-2	water	X	X	X	X	X	X
YSA14-GW03-1107	680-31860-3	water	X	X	X	X	X	X
YSA14-TB01-110907	680-31860-4	water	X	X	X	X	X	X
YSA14-GW05-1107 MS	680-31822-1MS	water	X	X	X	X	X	X
YSA14-GW05-1107 MSD	680-31822-1MSD	water	X	X	X	X	X	X

The following quality control samples were provided with this SDG: samples YS14-TB01-110807 and YS14-TB01-110907-trip blanks, sample YS14-FB01-110807-field blank; and samples YS04-EB01-110807 and YS04-EB01-110907-equipment blanks.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- GC/MS Tuning *
- HPLC Performance *
- Initial/Continuing Calibrations *
- CRDL Standards *
- ICSA/ICSAB Standards *
- Blanks
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries
- Matrix Duplicate RPDs *
- Serial Dilution Results
- Field Duplicates *
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds *

* - indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria.

Major Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG that resulted in the rejection of data. All results rejected, R, should be considered unusable. However, these rejections were the result of necessary dilutions and did not result in the loss of viable data points.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page.

VOA

Blank contamination was noted in the QC blanks associated with samples in this batch. Qualifications were added to the data.

Two samples required a dilution to obtain results within the calibration range.

Explosives by 8330/8332

One sample required a dilution to obtain results within the calibration range.

One result was reported with a P flag to indicate column quantitation %Ds greater than 40%. This result was qualified as estimated J.

Nitroguanidine by Modified 8330

No qualifications to the data were required.

Total and Dissolved Metals, Mercury & Cyanide

Blank contamination was noted in the laboratory and field QC blanks associated with the samples in this batch. Qualifications were added to the data. Specific information is provided below. Please note that field QC blanks were not flagged for laboratory blank contamination per CH2M HILL.

The MS associated with the total and dissolved metals analyses exhibited non-compliant %Rs for silver that were below the QC limit. All results for silver in the total and dissolved metals samples were qualified as biased low L/UL. The MS associated with the total metals analyses exhibited non-compliant %Rs for aluminum and iron that were above the QC limit. All positive results for aluminum and iron in the total metals samples were qualified as biased high K.

The SD associated with the dissolved metals analysis exhibited a non-compliant %D for manganese. All results for manganese in the dissolved metals samples were qualified as estimated J/UJ.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required. Information regarding the holding time applied for the nitroguanidine analysis was requested and received from the laboratory.

Technical Holding Times

According to chain of custody records, sampling was performed on 11/08-09/07. Samples were received at the laboratory 11/09-10/07. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Blanks

VOA

The associated field QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS04-EB01-110807	chloroform	8.6J	10	43
YS04-EB01-110907	chloroform	8.3J	10	41.5
YS04-FB01-110807	chloroform	9.3J	10	46.5

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
YSA14-GW05-1107, YSA14-GW01-1107, YSA14-GW03-1107	chloroform	B	BL

Total & Dissolved Metals, Mercury & Cyanide

Contamination was noted in the associated blanks and qualifications were required. Contamination and sample result qualifications are indicated in the following tables.

Blank ID	Analyte	Concentration	Action Level	Q Flag
ICB	cyanide	6.723J ug/L	27 ug/L	B
	manganese	-0.090J ug/L	< 10X MDL (0.015 ug/L)	L/UL up to action level
	mercury	-0.038J ug/L	< 10X MDL (0.029 ug/L)	L/UL up to action level
CCB	cyanide	-2.464J ug/L	< 10X MDL (1.5 ug/L)	L/UL up to action level
	iron	7.614J ug/L	38.07 ug/L	B
	calcium	529.6J ug/L	2648 ug/L	B
	manganese	0.201J ug/L	1.005 ug/L	B
	zinc	17.210J ug/L	86.05 ug/L	B
	thallium	-1.869J ug/L	< 10X MDL (1.6 ug/L)	L/UL up to action level
	chromium	-0.205J ug/L	< 10X MDL (0.160 ug/L)	L/UL up to action level
YS14-EB01-110907F	chromium	0.17J ug/L	0.85 ug/L	B
	iron	106 ug/L	530 ug/L	B
	manganese	6.9J ug/L	34.5 ug/L	B
	sodium	1860J ug/L	9300 ug/L	B

Sample ID	analyte	Q Flag	Q Code
YSA14-GW01-1107, YSA14-GW05-1107	cyanide	B	BL
all field samples	cyanide	UL	BL
all field samples	mercury	UL	BL
YSA14-GW05-1107F, YSA14-GW02-1107F	iron	B	BL
YSA14-GW02-1107, YSA14-GW02-1107F	zinc	B	BL
YSA14-GW01-1107F, YSA14-GW02-1107, YSA14-GW02-1107F, YSA14-GW03-1107, YSA14-GW03-1107F	thallium	L/UL up to action limit	BL
YSA14-GW01-1107F	chromium	L/UL up to action limit	BL
YSA14-GW02-1107F, YSA14-GW03-1107F	chromium	B	BL
YSA14-GW03-1107F, YSA14-GW01-1107F	manganese	B	BL
YSA14-GW02-1107F	sodium	B	BL

Matrix Spike Recoveries

Total & Dissolved Metals, Mercury & Cyanide

The matrix spike analysis of the sample YSA14-GW05-1107 for total and dissolved metals exhibited non-compliant %Rs (<75% or >125%) for several analytes. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YSA14-GW05-1107	silver	all total metals	71%	L/UL	MSL
	aluminum		181%	K	MSH
	iron		252%	K	MSH
YSA14-GW05-1107F	silver	all dissolved metals	70%	L/UL	MSL

Serial Dilution Results

Total & Dissolved Metals, Mercury & Cyanide

The serial dilution analysis of the sample YSA14-GW05-1107 for dissolved metals exhibited a non-compliant %D (>10%) for the analyte manganese. Specific action is noted in the following table.

SD	Analytes	Samples Affected	%D	Q Flag	Q Code
YSA14-GW05-1107F	manganese	all dissolved metals	15%	J/UJ	SD

Identification/Quantitation

VOA

Dilutions were required for samples YSA14-GW05-1107 and YSA14-GW01-1107 to obtain results within the calibration range. Therefore, E-flagged compound results were not used in the initial analysis of these samples in favor of the corresponding D-flagged compound result in the dilution.

Explosives by 8330/8332

One dilution was required for sample YSA14-GW02-1107 to obtain results within the calibration range. Therefore, E-flagged compound result was not used in the initial analysis of this sample in favor of the corresponding D-flagged compound result in the dilution.

All P flagged compounds were qualified as estimated J with a qualifier code of 2C, to indicate column quantitation %Ds greater than 40%.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q Code
YSA14-GW05-1107, YSA14-GW01-1107, YSA14-GW03-1107	chloroform	+	B	BL
YSA14-GW05-1107, YSA14-GW01-1107	all E-flagged results	+	R	DL
YSA14-GW05-1107DL, YSA14-GW01-1107DL	all results except D-flagged compounds	+/-	R	DL

Explosives by 8330/8332

Sample ID	Parameter	Results	Q-Flag	Q Code
all samples	all P flagged compounds	+P	J	2C
YSA14-GW02-1107	all E flagged compounds	+E	R	DL
YSA14-GW02-1107DL	all except corresponding dilution results	+/-	R	DL

Nitroguanidine

Sample ID	Parameter	Results	Q-Flag	Q Code
No qualifications were required				

Total & Dissolved Metals, Mercury & Cyanide

Sample ID	Analyte	Results	Q-Flag	Q Code
YSA14-GW01-1107, YSA14-GW05-1107	cyanide	+ up to action level	B	BL
all field samples	cyanide	-	UL	BL
all field samples	mercury	-	UL	BL
YSA14-GW05-1107F, YSA14-GW02-1107F	iron	+ up to action level	B	BL
YSA14-GW02-1107, YSA14-GW02-1107F	zinc	+ up to action level	B	BL
YSA14-GW01-1107F, YSA14-GW02-1107, YSA14-GW02-1107F, YSA14-GW03-1107, YSA14-GW03-1107F	thallium	+/- up to 10 X MDL	L/UL	BL
YSA14-GW01-1107F	chromium	+/- up to 10 X MDL	L/UL	BL
YSA14-GW02-1107F, YSA14-GW03-1107F	chromium	+ up to action level	B	BL
YSA14-GW03-1107F, YSA14-GW01-1107F	manganese	+ up to action level	B	BL
YSA14-GW02-1107F	sodium	+ up to action level	B	BL
all total field samples	silver	+/-	L/UL	MSL
all total field samples	aluminum iron	+	K	MSH
all dissolved field samples	silver	+/-	L/UL	MSL
all dissolved field samples	manganese*	+/-	J/UJ	SD

* two sample results for manganese were flagged as B in the dissolved field samples due to blank contamination rather than J for serial dilution %D

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high

Method/Preparation Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.

General Abbreviations

RL	reporting limit
Q code	qualifier code
+	positive result
-	non-detect result IDL
IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High Moisture content

CH2M HILL
15010 Conference Center Drive
Suite 200
Chantilly, Virginia 20151

February 7, 2008

SDG# YORK06
Test America Laboratories-Savannah, Burlington, West Sacramento, and North Canton
Naval Weapons Station Yorktown

Dear Ms. Bennet,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # YORK06. The data validation was performed in accordance with the EPA CLP Statement of Work, Document OLM04.3 for volatiles, semivolatiles, and PCBs, the EPA CLP Statement of Work ILM05.3 for metals and dissolved metals, and the SW-846 Methods 8330/8332 for explosives compounds. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, as applicable (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review). The region does not have a validation document for the ILM05.3 methods or for the SW-846 methods 8330 and 8332, so method criteria were substituted but Region III qualification conventions and qualifiers were used. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	V	SV	PCBs	Met	D Met	Exp	NGL	NGU
YSA14-TB01-111207	680-31887-1	water	X							
YSA14-FB01-111207	680-31887-2	water	X			X	X	X	X	X
YSA14-GW04-1107	680-31887-3	water	X			X	X	X	X	X
YS08-GW01A-1107	680-31887-4	water	X	X	X	X	X	X	X	X
YS08-GW01-1107	680-31913-1	water	X	X	X	X	X	X	X	X
YS08-GW03-1107	680-31913-2	water	X	X	X	X	X	X	X	X
YS08-TB01-111307	680-31913-3	water	X							
YS08-EB01-111307	680-31887-1	water	X	X	X	X	X	X	X	X
YS08-TB01-111407	680-31955-1	water	X							
YS08-GW04-1107	680-31955-2	water	X	X	X	X	X	X	X	X
YS08-GW06-1107	680-31955-3	water	X	X	X	X	X	X	X	X
YS08-GW6P-1107	680-31955-4	water	X	X	X	X	X	X	X	X
YS08-GW05-1107	680-31955-5	water	X	X	X	X	X	X	X	X
YS08-EB01-111407	680-31955-6	water	X	X	X	X	X	X	X	X
YS08-GW01-1107 MS	680-31913-1MS	water	X	X	X	X	X	X	X	X
YS08-GW01-1107 MSD	680-31913-1MSD	water	X	X	X	X	X	X	X	X

The following quality control samples were provided with this SDG: samples YSA14-TB01-111207, YS08-TB01-111307 and YS08-TB01-111407-trip blanks, sample YSA14-FB01-111207-field blank; samples YS08-EB01-111307 and YS08-EB01-111407-equipment blanks; and sample YS08-GW6P-1107-field duplicate of sample YS08-GW06-1107.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times
- GC/MS Tuning *
- GC/HPLC Performance *
- Initial/Continuing Calibrations *
- CRDL Standards *
- ICSA/ICSAB Standards *
- Blanks
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries
- Matrix Duplicate RPDs *
- Serial Dilution Results *
- Field Duplicates
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds

* - indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria.

Major Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG that resulted in the rejection of data. All results rejected, R, should be considered unusable. However, these rejections were the result of re-extractions and did not result in the loss of viable data points.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page.

VOA

Blank contamination was noted in the QC blanks associated with samples in this batch. Qualifications were added to the data.

SVOA

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

PCBs

No qualifications to the data were required.

Explosives by 8330/8332

Eleven of the samples were re-extracted outside of holding time due to a spiking error. These samples exhibited comparable results in the re-extract analysis. Surrogate recoveries in both sets of data were acceptable. Since the results were comparable, the initial extraction data is accepted and the re-extract data is rejected, R. One of these samples YSA14-GW04-1107 exhibited a confirmed result for nitrobenzene in the original extraction that was detected but not confirmed (peak was outside the RTW) in the re-extraction analysis. The laboratory reported this result based on the original analysis. The validator is in agreement and the result does not require qualification.

The MS/MSD sample exhibited variable results that were affected by the dilution of the extract. However, the compound 3,5-dinitroaniline was not recovered. Some recovery of this compound should be expected. Therefore, the reported non-detect result in the native sample was qualified as biased low UL.

One sample required a dilution to accurately quantitate the target compound HMX. The E flagged result was rejected in favor of the corresponding result in the dilution analysis.

The field duplicate pair exhibited 200% RPDs for two compounds. These compounds were qualified as estimated J/UJ in the field duplicate pair.

Some results were reported with P flags to indicate column quantitation %Ds greater than 40%. These results were qualified as estimated J.

Nitroguanidine by Modified 8330

No qualifications to the data were required.

Total and Dissolved Metals, Mercury & Cyanide

Blank contamination was noted in the laboratory and field QC blanks associated with the samples in this batch. Qualifications were added to the data. Specific information is provided below. Please note that field QC blanks were not flagged for laboratory blank contamination per CH2M HILL.

The MS associated with the total and dissolved metals analyses exhibited non-compliant %Rs for silver that were below the QC limit. All results for silver in the total and dissolved metals samples were qualified as biased low L/UL. The MS associated with the total metals analyses exhibited a non-compliant %R for iron that was below the QC limit. All results for iron in the total metals samples were qualified as biased low L/UL.

The field duplicate pair exhibited one analyte with a non-compliant RPD. The analyte was flagged as estimated J in the field duplicate pair.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Information regarding the holding time applied for the nitroguanidine analysis was requested and received from the laboratory. A sample aliquot was not received for the dissolved metals analysis of sample YS08-GW01A-1107. The laboratory used an explosives sample. Confirmation of in-house preservation was requested from the laboratory. A question regarding one explosives result resulted in the submission of an amended case narrative. Copies of all e-mail correspondence are included in the worksheets section of this validation report.

Technical Holding Times

According to chain of custody records, sampling was performed on 11/12-14/07. Samples were received at the laboratory 11/13-15/07. All sample preparation and analysis was performed within Region III and/or method holding time requirements with the following exceptions.

Explosives by 8330/8332

According to the case narrative, eleven samples were spiked with an incorrect concentration of spiking solution. For this reason the laboratory re-extracted these samples 22 to 24 days outside the 7-day extraction holding time for water samples. These original and re-extracted samples exhibited acceptable recoveries for the surrogate compounds. A comparison of the results in the two sets of data showed that the reported results in the RE analyses were comparable to the results reported from the original analyses of the samples. For this reason, all RE samples were rejected R with a qualifier code of RE in favor of the results reported from the original analysis of the samples.

Blanks

VOA

The associated field QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS08-EB01-111307	chloroform	6.1J	10	30.5
	methylene chloride	2.2J	10	22
YS08-EB01-111407	2-butanone	3.4J	10	34
	acetone	2.0J	10	20
	chloroform	4.6J	10	23

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
YS08-GW01-107, YS08-GW03-1107, YS08-GW04-1107, YS08-GW05-1107	chloroform	B	BL
YS08-GW04-1107	2-butanone	B	BL
YS08-GW04-1107, YS08-GW6P-1107	acetone	B	BL

SVOA

The associated method and QC blanks exhibited contamination for TICs. All B flagged TICs in the field samples are flagged B and crossed out in accordance with the Region III modifications to the National Functional Guidelines.

Total & Dissolved Metals, Mercury & Cyanide

Contamination was noted in the associated blanks and qualifications were required. Contamination and sample result qualifications are indicated in the following tables.

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBLK	mercury	-0.046J ug/L	< 10X MDL (0.029 ug/L)	L/UL up to action level
	manganese	0.165J ug/L	0.825 ug/L	B
ICB	lead	1.841J ug/L	9.205 ug/L	B
	cyanide	6.723 J ug/L	33.6 ug/L	B
CCB	iron	12.05J ug/L	60.25 ug/L	B
	chromium	0.178J ug/L	0.89 ug/L	B
	aluminum	40.64J ug/L	203.2 ug/L	B
	cyanide	-2.464J ug/L	< 10X MDL (1.5 ug/L)	UL
YS08-EB01-111307	chromium	-0.50J ug/L	2.50 ug/L	B

Sample ID	analyte	Q Flag	Q Code
all samples	mercury	UL	BL
YS08-GW01-1107F, YS08-GW01A-1107F, YS08-GW03-1107F, YS08-GW04-1107F	manganese	B	BL
YS08-GW01-1107, YS08-GW01A-1107, YS08-GW04-1107, YS08-GW05-1107, YS08-GW05-1107F, YS08-GW06-1107, YS08-GW06-1107F, YS08-GW06P-1107, YSA14-GW04-1107	lead	B	BL
YS08-GW04-1107F, YS08-GW06P-1107F	iron	B	BL
all dissolved metals samples, YS08-GW01-1107	chromium	B	BL
YS08-GW05-1107F, YS08-GW06-1107F, YS08-GW06P-1107F	aluminum	B	BL
YS08-GW06-1107	cyanide	B	BL
YS08-GW04-1107, YS08-GW06P-1107, YS08-GW05-1107, YS08-GW03-1107	cyanide	UL	BL

Matrix Spike Recoveries

Explosives by 8330/8332

The MS/MSD pair of sample YS08-GW01-1107 exhibited variable results that were affected by the dilution of the extract. However, the compound 3,5-dinitroaniline was not recovered. Some recovery of this compound should be expected. Therefore, the reported non-detect result in the native sample was qualified as biased low UL with a qualifier code of MSL.

Total & Dissolved Metals, Mercury & Cyanide

The matrix spike analysis of the sample YS08-GW01-1107 for total metals exhibited non-compliant %Rs (<75% or >125%) for the analytes silver and iron. The matrix spike analysis of the sample YS08-GW01-1107 for dissolved metals exhibited a non-compliant %R (<75% or >125%) for the analyte silver. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS08-GW01-1107	silver	all total field samples	72%	L/UL	MSL
	iron		52%		
YS08-GW01-1107	silver	all dissolved field samples	70%		

Field Duplicates

Explosives by 8330/8332

Two compounds in the field duplicate pair submitted in this SDG exhibited non-compliant RPDs. Specific action is noted in the following table.

FD Pair	Compounds	Samples Affected	RPD	Q Flag	Q Code
YS08-GW06-1107, YS08-GW06P-1107	nitrobenzene HMX	YS08-GW06-1107, YS08-GW06P-1107	200% 200%	J/UJ	FD

Total & Dissolved Metals, Mercury & Cyanide

The field duplicate pair submitted in this SDG exhibited non-compliant RPDs for one analyte. Specific action is noted in the following table.

FD Pair	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS08-GW06-1107, YS08-GW06P-1107	iron	YS08-GW06-1107, YS08-GW06P-1107	100%	J*	FD

*Note – this analyte was previously flagged biased low due to non-compliant matrix spike recoveries.

Identification/Quantitation

Explosives by 8330/8332

One dilution was required for sample YS08-GW01-1107 to obtain results within the calibration range. The E flagged result for HMX was not used in favor of the corresponding D flagged result in the dilution analysis, qualifier code DL.

All P flagged compounds were qualified as estimated J with a qualifier code of 2C, to indicate column quantitation %Ds greater than 40%.

Total & Dissolved Metals, Mercury & Cyanide

A dissolved metals aliquot was not received for sample YS08-GW01A-1107. The laboratory was instructed to use an extra explosive aliquot. This sample was decanted into a nitric acid preserved bottle in the laboratory during the sample receipt process. Reported results in this sample are qualified as estimated J/UJ with a qualifier code of OT because the sample was not preserved in the field.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q Code
YS08-GW01-107, YS08-GW03-1107, YS08-GW04-1107, YS08-GW05-1107	chloroform	+	B	BL
YS08-GW04-1107	2-butanone	+	B	BL
YS08-GW04-1107, YS08-GW6P-1107	acetone	+	B	BL

SVOA

Sample ID	Compound	Results	Q-Flag	Q Code
All samples	blank contaminant TICs	+	B	BL

PCBs

Sample ID	Parameter	Results	Q-Flag	Q Code
No qualifications were required				

Explosives by 8330/8332

Sample ID	Parameter	Results	Q-Flag	Q Code
All RE samples	all compounds	+/-	R	RE
YS08-GW01-1107	3,5-dinitroaniline	-	UJ	MSL
all samples	all P flagged compounds	+P	J	2C
YS08-GW01-1107	all E flagged compounds	+E	R	DL
YS08-GW01-1107DL	all but HMX	+/-	R	DL
YS08-GW06-1107, YS08-GW06P-1107	nitrobenzene HMX	+/-	J/UJ	FD

Total & Dissolved Metals, Mercury & Cyanide

Sample ID	Analyte	Results	Q-Flag	Q Code
all samples	mercury	-	UL	BL
YS08-GW01-1107F, YS08-GW01A-1107F, YS08-GW03-1107F, YS08-GW04-1107F	manganese	+ up to action level	B	BL
YS08-GW01-1107, YS08-GW01A-1107, YS08-GW04-1107, YS08-GW05-1107, YS08-GW05-1107F, YS08-GW06-1107, YS08-GW06-1107F, YS08-GW06P-1107, YSA14-GW04-1107	lead	+ up to action level	B	BL
YS08-GW04-1107F, YS08-GW06P-1107F	iron	+ up to action level	B	BL
all dissolved metals samples, YS08-GW01-1107	chromium	+ up to action level	B	BL
YS08-GW05-1107F, YS08-GW06-1107F, YS08-GW06P-1107F	aluminum	+ up to action level	B	BL
YS08-GW06-1107	cyanide	+ up to action level	B	BL
YS08-GW04-1107, YS08-GW06P-1107, YS08-GW05-1107, YS08-GW03-1107	cyanide	-	UL	BL
all field samples	silver	+/-	L/UL	MSL
all total field samples	iron	+/-	L/UL	MSL
YS08-GW06-1107, YS08-GW19P-1107	iron	+/-	J/UJ*	FD
YS08-GW01A-1107	all analytes	+/-	J/UJ	OT

*Note – this analyte was previously flagged biased low due to non-compliant matrix spike recoveries.

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high

Method/Preparation Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.

General Abbreviations

RL	reporting limit
Q code	qualifier code
+	positive result
-	non-detect result IDL
IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High Moisture content

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS22-SW03-1207
Lab Sample ID: 680-32610-4
Matrix: Water
Lab File ID: s00371.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5 (mL)
Date Analyzed: 12/13/2007 00:22
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93663
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS22-SW03-1207 | Lab Sample ID: 680-32610-4

Matrix: Water | Lab File ID: s00371.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5 (mL) | Date Analyzed: 12/13/2007 00:22

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93663 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

021508

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS22-SW03-1207
Lab Sample ID: 680-32610-4
Matrix: Water
Lab File ID: s00371.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5 (mL)
Date Analyzed: 12/13/2007 00:22
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93663
Units: ug/L
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

VM 02/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YSA14-SW01-1207 | Lab Sample ID: 680-32610-6

Matrix: Water | Lab File ID: s00372.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5 (mL) | Date Analyzed: 12/13/2007 00:44

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93663 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-SW01-1207
Lab Sample ID: 680-32610-6
Matrix: Water
Lab File ID: s00372.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5 (mL)
Date Analyzed: 12/13/2007 00:44
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93663
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-SW01-1207
Lab Sample ID: 680-32610-6
Matrix: Water
Lab File ID: s00372.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5 (mL)
Date Analyzed: 12/13/2007 00:44
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93663
Units: ug/L
Number TICs Found: 1
TIC Total: 6.5

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.98	6.5	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YSA14-EB01-121007 | Lab Sample ID: 680-32610-8

Matrix: Water | Lab File ID: s00369.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5 (mL) | Date Analyzed: 12/12/2007 23:38

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93663 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-EB01-121007
Lab Sample ID: 680-32610-8
Matrix: Water
Lab File ID: s00369.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5 (mL)
Date Analyzed: 12/12/2007 23:38
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93663
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YSA14-EB01-121007 | Lab Sample ID: 680-32610-8

Matrix: Water | Lab File ID: s00369.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5 (mL) | Date Analyzed: 12/12/2007 23:38

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93663 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-TB01-121007
Lab Sample ID: 680-32610-9
Matrix: Water
Lab File ID: s00370.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5 (mL)
Date Analyzed: 12/13/2007 00:00
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93663
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-TB01-121007
Lab Sample ID: 680-32610-9
Matrix: Water
Lab File ID: s00370.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5 (mL)
Date Analyzed: 12/13/2007 00:00
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93663
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YSA14-TB01-121007 | Lab Sample ID: 680-32610-9

Matrix: Water | Lab File ID: s00370.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5 (mL) | Date Analyzed: 12/13/2007 00:00

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93663 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW01-1207 | Lab Sample ID: 680-32610-10

Matrix: Water | Lab File ID: s00373.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5 (mL) | Date Analyzed: 12/13/2007 01:06

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93663 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW01-1207 | Lab Sample ID: 680-32610-10

Matrix: Water | Lab File ID: s00373.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5 (mL) | Date Analyzed: 12/13/2007 01:06

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93663 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW01-1207 | Lab Sample ID: 680-32610-10

Matrix: Water | Lab File ID: s00373.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5 (mL) | Date Analyzed: 12/13/2007 01:06

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93663 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW01P-1207
Lab Sample ID: 680-32610-12
Matrix: Water
Lab File ID: s00374.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5 (mL)
Date Analyzed: 12/13/2007 01:28
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93663
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethan e	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW01P-1207
Lab Sample ID: 680-32610-12
Matrix: Water
Lab File ID: s00374.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5 (mL)
Date Analyzed: 12/13/2007 01:28
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93663
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW01P-1207 | Lab Sample ID: 680-32610-12

Matrix: Water | Lab File ID: s00374.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5 (mL) | Date Analyzed: 12/13/2007 01:28

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93663 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW04-1207 | Lab Sample ID: 680-32635-1

Matrix: Water | Lab File ID: s00377.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 20:03

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethan e	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U 03/KCH	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW04-1207 | Lab Sample ID: 680-32635-1

Matrix: Water | Lab File ID: s00377.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 20:03

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW04-1207 | Lab Sample ID: 680-32635-1

Matrix: Water | Lab File ID: s00377.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 20:03

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW05-1207 | Lab Sample ID: 680-32635-3

Matrix: Water | Lab File ID: s00378.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 20:25

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U WS,CCH	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW05-1207 | Lab Sample ID: 680-32635-3

Matrix: Water | Lab File ID: s00378.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 20:25

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-SW05-1207 | Lab Sample ID: 680-32635-3

Matrix: Water | Lab File ID: s00378.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 20:25

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

Number TICs Found: 1 | TIC Total: 5.5

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.98	5.5	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS08-SW01-1207 | Lab Sample ID: 680-32635-5

Matrix: Water | Lab File ID: s00379.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 20:47

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U UJ,CCH	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

 VM 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS08-SW01-1207 | Lab Sample ID: 680-32635-5

Matrix: Water | Lab File ID: s00379.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 20:47

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS08-SW01-1207 | Lab Sample ID: 680-32635-5

Matrix: Water | Lab File ID: s00379.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 20:47

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

Number TICs Found: 1 | TIC Total: 6.3

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.98	6.3	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS08-EB01-121107 | Lab Sample ID: 680-32635-7

Matrix: Water | Lab File ID: s00382.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 21:53

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	~~U~~ UJ,CCH	10	1.0
67-66-3	Chloroform	2.8	J	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

 VVS 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-EB01-121107
Lab Sample ID: 680-32635-7
Matrix: Water
Lab File ID: s00382.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5 (mL)
Date Analyzed: 12/14/2007 21:53
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93671
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-EB01-121107
Lab Sample ID: 680-32635-7
Matrix: Water
Lab File ID: s00382.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5 (mL)
Date Analyzed: 12/14/2007 21:53
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93671
Units: ug/L
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-TB01-121107 | Lab Sample ID: 680-32635-8

Matrix: Water | Lab File ID: s00383.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 22:15

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U DJ,CCH	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-TB01-121107
Lab Sample ID: 680-32635-8
Matrix: Water
Lab File ID: s00383.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5 (mL)
Date Analyzed: 12/14/2007 22:15
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93671
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

VW 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YBKG-TB01-121107 | Lab Sample ID: 680-32635-8

Matrix: Water | Lab File ID: s00383.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 22:15

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

VK 12/18/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-TB01-121107 | Lab Sample ID: 680-32635-9

Matrix: Water | Lab File ID: s00384.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 22:37

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethan e	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	~~U~~ UJ, CCH	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

 CVR 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-TB01-121107 | Lab Sample ID: 680-32635-9

Matrix: Water | Lab File ID: s00384.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 22:37

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-TB01-121107 | Lab Sample ID: 680-32635-9

Matrix: Water | Lab File ID: s00384.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 22:37

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

LMP 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-FB01-121107 | Lab Sample ID: 680-32635-10

Matrix: Water | Lab File ID: s00385.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 22:59

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethan e	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	~~U~~ UJ,CCH	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

 VM 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS12-FB01-121107
Lab Sample ID: 680-32635-10
Matrix: Water
Lab File ID: s00385.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5 (mL)
Date Analyzed: 12/14/2007 22:59
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93671
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-FB01-121107 | Lab Sample ID: 680-32635-10

Matrix: Water | Lab File ID: s00385.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 22:59

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

VM 02/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-GW23-1207 | Lab Sample ID: 680-32635-11

Matrix: Water | Lab File ID: s00386.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 23:21

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	4.6	J	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	~~U~~ UJ,CCH	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	14		10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

VM 02/28/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS12-GW23-1207
Lab Sample ID: 680-32635-11
Matrix: Water
Lab File ID: s00386.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5 (mL)
Date Analyzed: 12/14/2007 23:21
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93671
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	190		10	0.40
75-69-4	Trichlorofluoromethane	17		10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

WM 07/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-GW23-1207 | Lab Sample ID: 680-32635-11

Matrix: Water | Lab File ID: s00386.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 23:21

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

VM 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-EB01-121107 | Lab Sample ID: 680-32635-12

Matrix: Water | Lab File ID: s00387.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 23:43

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	~~U~~ UJ,CCH	10	1.0
67-66-3	Chloroform	2.2	J	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS12-EB01-121107
Lab Sample ID: 680-32635-12
Matrix: Water
Lab File ID: s00387.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5 (mL)
Date Analyzed: 12/14/2007 23:43
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93671
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-EB01-121107 | Lab Sample ID: 680-32635-12

Matrix: Water | Lab File ID: s00387.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 23:43

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207 MS
Lab Sample ID: 680-32635-5 MS
Matrix: Water
Lab File ID: s00380.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5 (mL)
Date Analyzed: 12/14/2007 21:09
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93671
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	60		10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	51		10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	50		10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207 MS
Lab Sample ID: 680-32635-5 MS
Matrix: Water
Lab File ID: s00380.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5 (mL)
Date Analyzed: 12/14/2007 21:09
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93671
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	51		10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	51		10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS08-SW01-1207 MSD | Lab Sample ID: 680-32635-5 MSD

Matrix: Water | Lab File ID: s00381.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5 (mL) | Date Analyzed: 12/14/2007 21:31

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93671 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	64		10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	53		10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	52		10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207 MSD
Lab Sample ID: 680-32635-5 MSD
Matrix: Water
Lab File ID: s00381.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5 (mL)
Date Analyzed: 12/14/2007 21:31
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93671
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	54		10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	54		10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-GW05-1207
Lab Sample ID: 680-32610-1
Matrix: Water
Lab File ID: t5048.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1060 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 18:26
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U	9.4	9.4
108-60-1	2,2'-oxybis[1-chloropropane]	9.4	U	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U	9.4	9.4
95-48-7	2-Methylphenol	9.4	U	9.4	9.4
88-74-4	2-Nitroaniline	47	U	47	47
88-75-5	2-Nitrophenol	9.4	U	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	47	U	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U	9.4	9.4
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U	9.4	9.4
106-44-5	4-Methylphenol	9.4	U	9.4	9.4
100-01-6	4-Nitroaniline	47	U	47	47
100-02-7	4-Nitrophenol	47	U	47	47
83-32-9	Acenaphthene	9.4	U	9.4	9.4
208-96-8	Acenaphthylene	9.4	U	9.4	9.4
98-86-2	Acetophenone	9.4	U	9.4	9.4
120-12-7	Anthracene	9.4	U	9.4	9.4
1912-24-9	Atrazine	9.4	U	9.4	9.4
100-52-7	Benzaldehyde	9.4	U	9.4	9.4
56-55-3	Benzo[a]anthracene	9.4	U	9.4	9.4
50-32-8	Benzo[a]pyrene	9.4	U	9.4	9.4
205-99-2	Benzo[b]fluoranthene	9.4	U	9.4	9.4
191-24-2	Benzo[g,h,i]perylene	9.4	U	9.4	9.4
207-08-9	Benzo[k]fluoranthene	9.4	U	9.4	9.4

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GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah

Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS21-GW05-1207

Lab Sample ID: 680-32610-1

Matrix: Water

Lab File ID: t5048.d

Analysis Method: OLM04.3/SV

Date Received: 12/11/2007 09:29

Sample wt/vol: 1060 (mL)

Date Extracted: 12/14/2007 14:50

Level: (low/med) Low

Date Analyzed: 01/06/2008 18:26

Con. Extract Vol.: 1 (mL)

Dilution Factor: 1

Injection Volume:

Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N

% Moisture:

Analy. Batch No.: 95286

Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.4	U	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U	9.4	9.4
105-60-2	Caprolactam	9.4	U	9.4	9.4
86-74-8	Carbazole	9.4	U	9.4	9.4
218-01-9	Chrysene	9.4	U	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U	9.4	9.4
132-64-9	Dibenzofuran	9.4	U	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U	9.4	9.4
206-44-0	Fluoranthene	9.4	U	9.4	9.4
86-73-7	Fluorene	9.4	U	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U	9.4	9.4
67-72-1	Hexachloroethane	9.4	U	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U	9.4	9.4
78-59-1	Isophorone	9.4	U	9.4	9.4
91-20-3	Naphthalene	9.4	U	9.4	9.4
98-95-3	Nitrobenzene	9.4	U	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U	9.4	9.4
87-86-5	Pentachlorophenol	47	U	47	47
85-01-8	Phenanthrene	9.4	U	9.4	9.4
108-95-2	Phenol	9.4	U	9.4	9.4
129-00-0	Pyrene	9.4	U	9.4	9.4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-GW05-1207
Lab Sample ID: 680-32610-1
Matrix: Water
Lab File ID: t5048.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1060 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 18:26
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 6
TIC Total: 101.2

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	~~36~~	~~A~~ B,BL
	Unknown	4.53	14	
	Unknown Organic Acid	9.54	~~24~~	B,BL
123-95-5	Octadecanoic acid, butyl ester	10.19	~~17~~	N B,BL
791-28-6	Phosphine oxide, triphenyl-	10.84	5.2	N
	Unknown	14.15	5.0	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-EB01-121007
Lab Sample ID: 680-32610-2
Matrix: Water
Lab File ID: t5051.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1000 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 19:31
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	10	U	10	10
108-60-1	2,2'-oxybis[1-chloropropane]	10	U	10	10
95-95-4	2,4,5-Trichlorophenol	10	U	10	10
88-06-2	2,4,6-Trichlorophenol	10	U	10	10
120-83-2	2,4-Dichlorophenol	10	U	10	10
105-67-9	2,4-Dimethylphenol	10	U	10	10
51-28-5	2,4-Dinitrophenol	50	U	50	50
121-14-2	2,4-Dinitrotoluene	10	U	10	10
606-20-2	2,6-Dinitrotoluene	10	U	10	10
91-58-7	2-Chloronaphthalene	10	U	10	10
95-57-8	2-Chlorophenol	10	U	10	10
95-48-7	2-Methylphenol	10	U	10	10
88-74-4	2-Nitroaniline	50	U	50	50
88-75-5	2-Nitrophenol	10	U	10	10
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	50	U	50	50
534-52-1	4,6-Dinitro-2-methylphenol	50	U	50	50
101-55-3	4-Bromophenyl phenyl ether	10	U	10	10
59-50-7	4-Chloro-3-methylphenol	10	U	10	10
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	10	U	10	10
106-44-5	4-Methylphenol	10	U	10	10
100-01-6	4-Nitroaniline	50	U	50	50
100-02-7	4-Nitrophenol	50	U	50	50
83-32-9	Acenaphthene	10	U	10	10
208-96-8	Acenaphthylene	10	U	10	10
98-86-2	Acetophenone	10	U	10	10
120-12-7	Anthracene	10	U	10	10
1912-24-9	Atrazine	10	U	10	10
100-52-7	Benzaldehyde	10	U	10	10
56-55-3	Benzo[a]anthracene	10	U	10	10
50-32-8	Benzo[a]pyrene	10	U	10	10
205-99-2	Benzo[b]fluoranthene	10	U	10	10
191-24-2	Benzo[g,h,i]perylene	10	U	10	10
207-08-9	Benzo[k]fluoranthene	10	U	10	10

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-EB01-121007
Lab Sample ID: 680-32610-2
Matrix: Water
Lab File ID: t5051.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1000 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 19:31
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	10	U	10	10
111-44-4	Bis(2-chloroethyl)ether	10	U	10	10
117-81-7	Bis(2-ethylhexyl) phthalate	10	U	10	10
85-68-7	Butyl benzyl phthalate	10	U	10	10
105-60-2	Caprolactam	10	U	10	10
86-74-8	Carbazole	10	U	10	10
218-01-9	Chrysene	10	U	10	10
53-70-3	Dibenz(a,h)anthracene	10	U	10	10
132-64-9	Dibenzofuran	10	U	10	10
84-66-2	Diethyl phthalate	10	U	10	10
131-11-3	Dimethyl phthalate	10	U	10	10
84-74-2	Di-n-butyl phthalate	10	U	10	10
117-84-0	Di-n-octyl phthalate	10	U	10	10
206-44-0	Fluoranthene	10	U	10	10
86-73-7	Fluorene	10	U	10	10
118-74-1	Hexachlorobenzene	10	U	10	10
87-68-3	Hexachlorobutadiene	10	U	10	10
77-47-4	Hexachlorocyclopentadiene	10	U	10	10
67-72-1	Hexachloroethane	10	U	10	10
193-39-5	Indeno[1,2,3-cd]pyrene	10	U	10	10
78-59-1	Isophorone	10	U	10	10
91-20-3	Naphthalene	10	U	10	10
98-95-3	Nitrobenzene	10	U	10	10
621-64-7	N-Nitrosodi-n-propylamine	10	U	10	10
86-30-6	N-Nitrosodiphenylamine	10	U	10	10
87-86-5	Pentachlorophenol	50	U	50	50
85-01-8	Phenanthrene	10	U	10	10
108-95-2	Phenol	10	U	10	10
129-00-0	Pyrene	10	U	10	10

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-EB01-121007
Lab Sample ID: 680-32610-2
Matrix: Water
Lab File ID: t5051.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1000 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 19:31
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 6
TIC Total: 79.4

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	26	A
1009-61-6	Ethanone, 1,1'-(1,4-phenylene)bis-	6.78	9.9	N
	Unknown	7.92	5.3	
	Unknown	9.54	20	
123-95-5	Octadecanoic acid, butyl ester	10.19	14	N
791-28-6	Phosphine oxide, triphenyl-	10.84	4.2	N

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-FB01-121007
Lab Sample ID: 680-32610-3
Matrix: Water
Lab File ID: t5052.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1020 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 19:53
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.8	U	9.8	9.8
108-60-1	2,2'-oxybis[1-chloropropane]	9.8	U	9.8	9.8
95-95-4	2,4,5-Trichlorophenol	9.8	U	9.8	9.8
88-06-2	2,4,6-Trichlorophenol	9.8	U	9.8	9.8
120-83-2	2,4-Dichlorophenol	9.8	U	9.8	9.8
105-67-9	2,4-Dimethylphenol	9.8	U	9.8	9.8
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.8	U	9.8	9.8
606-20-2	2,6-Dinitrotoluene	9.8	U	9.8	9.8
91-58-7	2-Chloronaphthalene	9.8	U	9.8	9.8
95-57-8	2-Chlorophenol	9.8	U	9.8	9.8
95-48-7	2-Methylphenol	9.8	U	9.8	9.8
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.8	U	9.8	9.8
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.8	U	9.8	9.8
59-50-7	4-Chloro-3-methylphenol	9.8	U	9.8	9.8
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	9.8	U	9.8	9.8
106-44-5	4-Methylphenol	9.8	U	9.8	9.8
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.8	U	9.8	9.8
208-96-8	Acenaphthylene	9.8	U	9.8	9.8
98-86-2	Acetophenone	9.8	U	9.8	9.8
120-12-7	Anthracene	9.8	U	9.8	9.8
1912-24-9	Atrazine	9.8	U	9.8	9.8
100-52-7	Benzaldehyde	9.8	U	9.8	9.8
56-55-3	Benzo[a]anthracene	9.8	U	9.8	9.8
50-32-8	Benzo[a]pyrene	9.8	U	9.8	9.8
205-99-2	Benzo[b]fluoranthene	9.8	U	9.8	9.8
191-24-2	Benzo[g,h,i]perylene	9.8	U	9.8	9.8
207-08-9	Benzo[k]fluoranthene	9.8	U	9.8	9.8

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-FB01-121007
Lab Sample ID: 680-32610-3
Matrix: Water
Lab File ID: t5052.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1020 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 19:53
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.8	U	9.8	9.8
111-44-4	Bis(2-chloroethyl)ether	9.8	U	9.8	9.8
117-81-7	Bis(2-ethylhexyl) phthalate	9.8	U	9.8	9.8
85-68-7	Butyl benzyl phthalate	9.8	U	9.8	9.8
105-60-2	Caprolactam	9.8	U	9.8	9.8
86-74-8	Carbazole	9.8	U	9.8	9.8
218-01-9	Chrysene	9.8	U	9.8	9.8
53-70-3	Dibenz(a,h)anthracene	9.8	U	9.8	9.8
132-64-9	Dibenzofuran	9.8	U	9.8	9.8
84-66-2	Diethyl phthalate	9.8	U	9.8	9.8
131-11-3	Dimethyl phthalate	9.8	U	9.8	9.8
84-74-2	Di-n-butyl phthalate	9.8	U	9.8	9.8
117-84-0	Di-n-octyl phthalate	9.8	U	9.8	9.8
206-44-0	Fluoranthene	9.8	U	9.8	9.8
86-73-7	Fluorene	9.8	U	9.8	9.8
118-74-1	Hexachlorobenzene	9.8	U	9.8	9.8
87-68-3	Hexachlorobutadiene	9.8	U	9.8	9.8
77-47-4	Hexachlorocyclopentadiene	9.8	U	9.8	9.8
67-72-1	Hexachloroethane	9.8	U	9.8	9.8
193-39-5	Indeno[1,2,3-cd]pyrene	9.8	U	9.8	9.8
78-59-1	Isophorone	9.8	U	9.8	9.8
91-20-3	Naphthalene	9.8	U	9.8	9.8
98-95-3	Nitrobenzene	9.8	U	9.8	9.8
621-64-7	N-Nitrosodi-n-propylamine	9.8	U	9.8	9.8
86-30-6	N-Nitrosodiphenylamine	9.8	U	9.8	9.8
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.8	U	9.8	9.8
108-95-2	Phenol	9.8	U	9.8	9.8
129-00-0	Pyrene	9.8	U	9.8	9.8

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-FB01-121007
Lab Sample ID: 680-32610-3
Matrix: Water
Lab File ID: t5052.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1020 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 19:53
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 5
TIC Total: 95.8

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	40	A
	Unknown Organic Acid	9.54	23	
123-95-5	Octadecanoic acid, butyl ester	10.19	16	N
791-28-6	Phosphine oxide, triphenyl-	10.85	9.8	N
	Unknown	13.87	7.0	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS22-SW03-1207
Lab Sample ID: 680-32610-4
Matrix: Water
Lab File ID: t5053.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1000 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 20:14
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	10	U	10	10
108-60-1	2,2'-oxybis[1-chloropropane]	10	U	10	10
95-95-4	2,4,5-Trichlorophenol	10	U	10	10
88-06-2	2,4,6-Trichlorophenol	10	U	10	10
120-83-2	2,4-Dichlorophenol	10	U	10	10
105-67-9	2,4-Dimethylphenol	10	U	10	10
51-28-5	2,4-Dinitrophenol	50	U	50	50
121-14-2	2,4-Dinitrotoluene	10	U	10	10
606-20-2	2,6-Dinitrotoluene	10	U	10	10
91-58-7	2-Chloronaphthalene	10	U	10	10
95-57-8	2-Chlorophenol	10	U	10	10
95-48-7	2-Methylphenol	10	U	10	10
88-74-4	2-Nitroaniline	50	U	50	50
88-75-5	2-Nitrophenol	10	U	10	10
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	50	U	50	50
534-52-1	4,6-Dinitro-2-methylphenol	50	U	50	50
101-55-3	4-Bromophenyl phenyl ether	10	U	10	10
59-50-7	4-Chloro-3-methylphenol	10	U	10	10
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	10	U	10	10
106-44-5	4-Methylphenol	10	U	10	10
100-01-6	4-Nitroaniline	50	U	50	50
100-02-7	4-Nitrophenol	50	U	50	50
83-32-9	Acenaphthene	10	U	10	10
208-96-8	Acenaphthylene	10	U	10	10
98-86-2	Acetophenone	10	U	10	10
120-12-7	Anthracene	10	U	10	10
1912-24-9	Atrazine	10	U	10	10
100-52-7	Benzaldehyde	10	U	10	10
56-55-3	Benzo[a]anthracene	10	U	10	10
50-32-8	Benzo[a]pyrene	10	U	10	10
205-99-2	Benzo[b]fluoranthene	10	U	10	10
191-24-2	Benzo[g,h,i]perylene	10	U	10	10
207-08-9	Benzo[k]fluoranthene	10	U	10	10

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS22-SW03-1207
Lab Sample ID: 680-32610-4
Matrix: Water
Lab File ID: t5053.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1000 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 20:14
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	10	U	10	10
111-44-4	Bis(2-chloroethyl)ether	10	U	10	10
117-81-7	Bis(2-ethylhexyl) phthalate	10	U	10	10
85-68-7	Butyl benzyl phthalate	10	U	10	10
105-60-2	Caprolactam	10	U	10	10
86-74-8	Carbazole	10	U	10	10
218-01-9	Chrysene	10	U	10	10
53-70-3	Dibenz(a,h)anthracene	10	U	10	10
132-64-9	Dibenzofuran	10	U	10	10
84-66-2	Diethyl phthalate	10	U	10	10
131-11-3	Dimethyl phthalate	10	U	10	10
84-74-2	Di-n-butyl phthalate	10	U	10	10
117-84-0	Di-n-octyl phthalate	10	U	10	10
206-44-0	Fluoranthene	10	U	10	10
86-73-7	Fluorene	10	U	10	10
118-74-1	Hexachlorobenzene	10	U	10	10
87-68-3	Hexachlorobutadiene	10	U	10	10
77-47-4	Hexachlorocyclopentadiene	10	U	10	10
67-72-1	Hexachloroethane	10	U	10	10
193-39-5	Indeno[1,2,3-cd]pyrene	10	U	10	10
78-59-1	Isophorone	10	U	10	10
91-20-3	Naphthalene	10	U	10	10
98-95-3	Nitrobenzene	10	U	10	10
621-64-7	N-Nitrosodi-n-propylamine	10	U	10	10
86-30-6	N-Nitrosodiphenylamine	10	U	10	10
87-86-5	Pentachlorophenol	50	U	50	50
85-01-8	Phenanthrene	10	U	10	10
108-95-2	Phenol	10	U	10	10
129-00-0	Pyrene	10	U	10	10

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS22-SW03-1207
Lab Sample ID: 680-32610-4
Matrix: Water
Lab File ID: t5053.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1000 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 20:14
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 14
TIC Total: 186.2

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	~~30~~	~~A~~ B,BL
	Unknown	9.54	41	
629-92-5	Nonadecane	9.91	4.5	N
123-95-5	Octadecanoic acid, butyl ester	10.19	~~29~~	~~N~~ B,BL
112-95-8	Eicosane	10.23	7.3	N
593-45-3	Octadecane	10.54	9.5	N
629-94-7	Heneicosane	10.84	10	N
593-49-7	Heptacosane	11.15	9.3	N
629-94-7	Heneicosane	11.46	7.8	N
629-99-2	Pentacosane	11.79	10	N
7225-64-1	Heptadecane, 9-octyl-	12.16	5.7	N
629-97-0	Docosane	12.56	5.0	N
	Unknown	13.77	5.1	
	Unknown	14.15	12	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-SW01-1207
Lab Sample ID: 680-32610-6
Matrix: Water
Lab File ID: t5054.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1020 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 20:36
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.8	U	9.8	9.8
108-60-1	2,2'-oxybis[1-chloropropane]	9.8	U	9.8	9.8
95-95-4	2,4,5-Trichlorophenol	9.8	U	9.8	9.8
88-06-2	2,4,6-Trichlorophenol	9.8	U	9.8	9.8
120-83-2	2,4-Dichlorophenol	9.8	U	9.8	9.8
105-67-9	2,4-Dimethylphenol	9.8	U	9.8	9.8
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.8	U	9.8	9.8
606-20-2	2,6-Dinitrotoluene	9.8	U	9.8	9.8
91-58-7	2-Chloronaphthalene	9.8	U	9.8	9.8
95-57-8	2-Chlorophenol	9.8	U	9.8	9.8
95-48-7	2-Methylphenol	9.8	U	9.8	9.8
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.8	U	9.8	9.8
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.8	U	9.8	9.8
59-50-7	4-Chloro-3-methylphenol	9.8	U	9.8	9.8
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	9.8	U	9.8	9.8
106-44-5	4-Methylphenol	9.8	U	9.8	9.8
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.8	U	9.8	9.8
208-96-8	Acenaphthylene	9.8	U	9.8	9.8
98-86-2	Acetophenone	9.8	U	9.8	9.8
120-12-7	Anthracene	9.8	U	9.8	9.8
1912-24-9	Atrazine	9.8	U	9.8	9.8
100-52-7	Benzaldehyde	9.8	U	9.8	9.8
56-55-3	Benzo[a]anthracene	9.8	U	9.8	9.8
50-32-8	Benzo[a]pyrene	9.8	U	9.8	9.8
205-99-2	Benzo[b]fluoranthene	9.8	U	9.8	9.8
191-24-2	Benzo[g,h,i]perylene	9.8	U	9.8	9.8
207-08-9	Benzo[k]fluoranthene	9.8	U	9.8	9.8

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-SW01-1207
Lab Sample ID: 680-32610-6
Matrix: Water
Lab File ID: t5054.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1020 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 20:36
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.8	U	9.8	9.8
111-44-4	Bis(2-chloroethyl)ether	9.8	U	9.8	9.8
117-81-7	Bis(2-ethylhexyl) phthalate	9.8	U	9.8	9.8
85-68-7	Butyl benzyl phthalate	9.8	U	9.8	9.8
105-60-2	Caprolactam	9.8	U	9.8	9.8
86-74-8	Carbazole	9.8	U	9.8	9.8
218-01-9	Chrysene	9.8	U	9.8	9.8
53-70-3	Dibenz(a,h)anthracene	9.8	U	9.8	9.8
132-64-9	Dibenzofuran	9.8	U	9.8	9.8
84-66-2	Diethyl phthalate	9.8	U	9.8	9.8
131-11-3	Dimethyl phthalate	9.8	U	9.8	9.8
84-74-2	Di-n-butyl phthalate	9.8	U	9.8	9.8
117-84-0	Di-n-octyl phthalate	9.8	U	9.8	9.8
206-44-0	Fluoranthene	9.8	U	9.8	9.8
86-73-7	Fluorene	9.8	U	9.8	9.8
118-74-1	Hexachlorobenzene	9.8	U	9.8	9.8
87-68-3	Hexachlorobutadiene	9.8	U	9.8	9.8
77-47-4	Hexachlorocyclopentadiene	9.8	U	9.8	9.8
67-72-1	Hexachloroethane	9.8	U	9.8	9.8
193-39-5	Indeno[1,2,3-cd]pyrene	9.8	U	9.8	9.8
78-59-1	Isophorone	9.8	U	9.8	9.8
91-20-3	Naphthalene	9.8	U	9.8	9.8
98-95-3	Nitrobenzene	9.8	U	9.8	9.8
621-64-7	N-Nitrosodi-n-propylamine	9.8	U	9.8	9.8
86-30-6	N-Nitrosodiphenylamine	9.8	U	9.8	9.8
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.8	U	9.8	9.8
108-95-2	Phenol	9.8	U	9.8	9.8
129-00-0	Pyrene	9.8	U	9.8	9.8

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-SW01-1207
Lab Sample ID: 680-32610-6
Matrix: Water
Lab File ID: t5054.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1020 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 20:36
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 8
TIC Total: 116.8

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	35	A B,BL
21400-25-9	1-Propene, 1,1,2-trichloro-	4.01	7.5	N
	Unknown	9.55	31	
123-95-5	Octadecanoic acid, butyl ester	10.19	22	N B,BL
629-92-5	Nonadecane	10.23	4.1	N
593-45-3	Octadecane	10.54	4.1	N
630-01-3	Hexacosane	10.85	5.4	N
	Unknown	14.15	7.7	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-EB01-121007
Lab Sample ID: 680-32610-8
Matrix: Water
Lab File ID: t5055.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 20:58
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.6	U	9.6	9.6
108-60-1	2,2'-oxybis[1-chloropropane]	9.6	U	9.6	9.6
95-95-4	2,4,5-Trichlorophenol	9.6	U	9.6	9.6
88-06-2	2,4,6-Trichlorophenol	9.6	U	9.6	9.6
120-83-2	2,4-Dichlorophenol	9.6	U	9.6	9.6
105-67-9	2,4-Dimethylphenol	9.6	U	9.6	9.6
51-28-5	2,4-Dinitrophenol	48	U	48	48
121-14-2	2,4-Dinitrotoluene	9.6	U	9.6	9.6
606-20-2	2,6-Dinitrotoluene	9.6	U	9.6	9.6
91-58-7	2-Chloronaphthalene	9.6	U	9.6	9.6
95-57-8	2-Chlorophenol	9.6	U	9.6	9.6
95-48-7	2-Methylphenol	9.6	U	9.6	9.6
88-74-4	2-Nitroaniline	48	U	48	48
88-75-5	2-Nitrophenol	9.6	U	9.6	9.6
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	48	U	48	48
534-52-1	4,6-Dinitro-2-methylphenol	48	U	48	48
101-55-3	4-Bromophenyl phenyl ether	9.6	U	9.6	9.6
59-50-7	4-Chloro-3-methylphenol	9.6	U	9.6	9.6
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.6	U	9.6	9.6
106-44-5	4-Methylphenol	9.6	U	9.6	9.6
100-01-6	4-Nitroaniline	48	U	48	48
100-02-7	4-Nitrophenol	48	U	48	48
83-32-9	Acenaphthene	9.6	U	9.6	9.6
208-96-8	Acenaphthylene	9.6	U	9.6	9.6
98-86-2	Acetophenone	9.6	U	9.6	9.6
120-12-7	Anthracene	9.6	U	9.6	9.6
1912-24-9	Atrazine	9.6	U	9.6	9.6
100-52-7	Benzaldehyde	9.6	U	9.6	9.6
56-55-3	Benzo[a]anthracene	9.6	U	9.6	9.6
50-32-8	Benzo[a]pyrene	9.6	U	9.6	9.6
205-99-2	Benzo[b]fluoranthene	9.6	U	9.6	9.6
191-24-2	Benzo[g,h,i]perylene	9.6	U	9.6	9.6
207-08-9	Benzo[k]fluoranthene	9.6	U	9.6	9.6

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-EB01-121007
Lab Sample ID: 680-32610-8
Matrix: Water
Lab File ID: t5055.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 20:58
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.6	U	9.6	9.6
111-44-4	Bis(2-chloroethyl)ether	9.6	U	9.6	9.6
117-81-7	Bis(2-ethylhexyl) phthalate	9.6	U	9.6	9.6
85-68-7	Butyl benzyl phthalate	9.6	U	9.6	9.6
105-60-2	Caprolactam	9.6	U	9.6	9.6
86-74-8	Carbazole	9.6	U	9.6	9.6
218-01-9	Chrysene	9.6	U	9.6	9.6
53-70-3	Dibenz(a,h)anthracene	9.6	U	9.6	9.6
132-64-9	Dibenzofuran	9.6	U	9.6	9.6
84-66-2	Diethyl phthalate	9.6	U	9.6	9.6
131-11-3	Dimethyl phthalate	9.6	U	9.6	9.6
84-74-2	Di-n-butyl phthalate	9.6	U	9.6	9.6
117-84-0	Di-n-octyl phthalate	9.6	U	9.6	9.6
206-44-0	Fluoranthene	9.6	U	9.6	9.6
86-73-7	Fluorene	9.6	U	9.6	9.6
118-74-1	Hexachlorobenzene	9.6	U	9.6	9.6
87-68-3	Hexachlorobutadiene	9.6	U	9.6	9.6
77-47-4	Hexachlorocyclopentadiene	9.6	U	9.6	9.6
67-72-1	Hexachloroethane	9.6	U	9.6	9.6
193-39-5	Indeno[1,2,3-cd]pyrene	9.6	U	9.6	9.6
78-59-1	Isophorone	9.6	U	9.6	9.6
91-20-3	Naphthalene	9.6	U	9.6	9.6
98-95-3	Nitrobenzene	9.6	U	9.6	9.6
621-64-7	N-Nitrosodi-n-propylamine	9.6	U	9.6	9.6
86-30-6	N-Nitrosodiphenylamine	9.6	U	9.6	9.6
87-86-5	Pentachlorophenol	48	U	48	48
85-01-8	Phenanthrene	9.6	U	9.6	9.6
108-95-2	Phenol	9.6	U	9.6	9.6
129-00-0	Pyrene	9.6	U	9.6	9.6

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YSA14-EB01-121007
Lab Sample ID: 680-32610-8
Matrix: Water
Lab File ID: t5055.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 20:58
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 13
TIC Total: 144

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	29	A
6781-42-6	Ethanone, 1,1'-(1,3-phenylene)bis-	6.78	19	N
	Unknown	6.97	9.2	
	Unknown	7.92	6.4	
	Unknown	7.95	4.7	
	Unknown	8.08	4.1	
	Unknown	9.54	25	
123-95-5	Octadecanoic acid, butyl ester	10.19	20	N
54833-48-6	Heptadecane, 2,6,10,15-tetramethyl-	10.23	5.0	N
593-45-3	Octadecane	10.54	4.2	N
629-78-7	Heptadecane	10.84	6.4	N
112-95-8	Eicosane	11.46	3.9	N
	Unknown	14.15	7.1	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW01-1207
Lab Sample ID: 680-32610-10
Matrix: Water
Lab File ID: t5049.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 18:48
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.6	U	9.6	9.6
108-60-1	2,2'-oxybis[1-chloropropane]	9.6	U	9.6	9.6
95-95-4	2,4,5-Trichlorophenol	9.6	U	9.6	9.6
88-06-2	2,4,6-Trichlorophenol	9.6	U	9.6	9.6
120-83-2	2,4-Dichlorophenol	9.6	U	9.6	9.6
105-67-9	2,4-Dimethylphenol	9.6	U	9.6	9.6
51-28-5	2,4-Dinitrophenol	48	U	48	48
121-14-2	2,4-Dinitrotoluene	9.6	U	9.6	9.6
606-20-2	2,6-Dinitrotoluene	9.6	U	9.6	9.6
91-58-7	2-Chloronaphthalene	9.6	U	9.6	9.6
95-57-8	2-Chlorophenol	9.6	U	9.6	9.6
95-48-7	2-Methylphenol	9.6	U	9.6	9.6
88-74-4	2-Nitroaniline	48	U	48	48
88-75-5	2-Nitrophenol	9.6	U	9.6	9.6
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	48	U	48	48
534-52-1	4,6-Dinitro-2-methylphenol	48	U	48	48
101-55-3	4-Bromophenyl phenyl ether	9.6	U	9.6	9.6
59-50-7	4-Chloro-3-methylphenol	9.6	U	9.6	9.6
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.6	U	9.6	9.6
106-44-5	4-Methylphenol	9.6	U	9.6	9.6
100-01-6	4-Nitroaniline	48	U	48	48
100-02-7	4-Nitrophenol	48	U	48	48
83-32-9	Acenaphthene	9.6	U	9.6	9.6
208-96-8	Acenaphthylene	9.6	U	9.6	9.6
98-86-2	Acetophenone	9.6	U	9.6	9.6
120-12-7	Anthracene	9.6	U	9.6	9.6
1912-24-9	Atrazine	9.6	U	9.6	9.6
100-52-7	Benzaldehyde	9.6	U	9.6	9.6
56-55-3	Benzo[a]anthracene	9.6	U	9.6	9.6
50-32-8	Benzo[a]pyrene	9.6	U	9.6	9.6
205-99-2	Benzo[b]fluoranthene	9.6	U	9.6	9.6
191-24-2	Benzo[g,h,i]perylene	9.6	U	9.6	9.6
207-08-9	Benzo[k]fluoranthene	9.6	U	9.6	9.6

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW01-1207
Lab Sample ID: 680-32610-10
Matrix: Water
Lab File ID: t5049.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 18:48
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.6	U	9.6	9.6
111-44-4	Bis(2-chloroethyl)ether	9.6	U	9.6	9.6
117-81-7	Bis(2-ethylhexyl) phthalate	9.6	U	9.6	9.6
85-68-7	Butyl benzyl phthalate	9.6	U	9.6	9.6
105-60-2	Caprolactam	9.6	U	9.6	9.6
86-74-8	Carbazole	9.6	U	9.6	9.6
218-01-9	Chrysene	9.6	U	9.6	9.6
53-70-3	Dibenz(a,h)anthracene	9.6	U	9.6	9.6
132-64-9	Dibenzofuran	9.6	U	9.6	9.6
84-66-2	Diethyl phthalate	9.6	U	9.6	9.6
131-11-3	Dimethyl phthalate	9.6	U	9.6	9.6
84-74-2	Di-n-butyl phthalate	9.6	U	9.6	9.6
117-84-0	Di-n-octyl phthalate	9.6	U	9.6	9.6
206-44-0	Fluoranthene	9.6	U	9.6	9.6
86-73-7	Fluorene	9.6	U	9.6	9.6
118-74-1	Hexachlorobenzene	9.6	U	9.6	9.6
87-68-3	Hexachlorobutadiene	9.6	U	9.6	9.6
77-47-4	Hexachlorocyclopentadiene	9.6	U	9.6	9.6
67-72-1	Hexachloroethane	9.6	U	9.6	9.6
193-39-5	Indeno[1,2,3-cd]pyrene	9.6	U	9.6	9.6
78-59-1	Isophorone	9.6	U	9.6	9.6
91-20-3	Naphthalene	9.6	U	9.6	9.6
98-95-3	Nitrobenzene	9.6	U	9.6	9.6
621-64-7	N-Nitrosodi-n-propylamine	9.6	U	9.6	9.6
86-30-6	N-Nitrosodiphenylamine	9.6	U	9.6	9.6
87-86-5	Pentachlorophenol	48	U	48	48
85-01-8	Phenanthrene	9.6	U	9.6	9.6
108-95-2	Phenol	9.6	U	9.6	9.6
129-00-0	Pyrene	9.6	U	9.6	9.6

WM 021808

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW01-1207
Lab Sample ID: 680-32610-10
Matrix: Water
Lab File ID: t5049.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 18:48
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 6
TIC Total: 101

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	39	A B,BL
	Unknown	4.01	5.1	
	Unknown	9.54	28	
123-95-5	Octadecanoic acid, butyl ester	10.19	18	N B,BL
	Unknown	10.85	5.5	
	Unknown	14.15	5.4	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW01P-1207
Lab Sample ID: 680-32610-12
Matrix: Water
Lab File ID: t5050.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1060 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 19:10
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U	9.4	9.4
108-60-1	2,2'-oxybis[1-chloropropane]	9.4	U	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U	9.4	9.4
95-48-7	2-Methylphenol	9.4	U	9.4	9.4
88-74-4	2-Nitroaniline	47	U	47	47
88-75-5	2-Nitrophenol	9.4	U	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	47	U	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U	9.4	9.4
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U	9.4	9.4
106-44-5	4-Methylphenol	9.4	U	9.4	9.4
100-01-6	4-Nitroaniline	47	U	47	47
100-02-7	4-Nitrophenol	47	U	47	47
83-32-9	Acenaphthene	9.4	U	9.4	9.4
208-96-8	Acenaphthylene	9.4	U	9.4	9.4
98-86-2	Acetophenone	9.4	U	9.4	9.4
120-12-7	Anthracene	9.4	U	9.4	9.4
1912-24-9	Atrazine	9.4	U	9.4	9.4
100-52-7	Benzaldehyde	9.4	U	9.4	9.4
56-55-3	Benzo[a]anthracene	9.4	U	9.4	9.4
50-32-8	Benzo[a]pyrene	9.4	U	9.4	9.4
205-99-2	Benzo[b]fluoranthene	9.4	U	9.4	9.4
191-24-2	Benzo[g,h,i]perylene	9.4	U	9.4	9.4
207-08-9	Benzo[k]fluoranthene	9.4	U	9.4	9.4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW01P-1207
Lab Sample ID: 680-32610-12
Matrix: Water
Lab File ID: t5050.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1060 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 19:10
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.4	U	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U	9.4	9.4
105-60-2	Caprolactam	9.4	U	9.4	9.4
86-74-8	Carbazole	9.4	U	9.4	9.4
218-01-9	Chrysene	9.4	U	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U	9.4	9.4
132-64-9	Dibenzofuran	9.4	U	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U	9.4	9.4
206-44-0	Fluoranthene	9.4	U	9.4	9.4
86-73-7	Fluorene	9.4	U	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U	9.4	9.4
67-72-1	Hexachloroethane	9.4	U	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U	9.4	9.4
78-59-1	Isophorone	9.4	U	9.4	9.4
91-20-3	Naphthalene	9.4	U	9.4	9.4
98-95-3	Nitrobenzene	9.4	U	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U	9.4	9.4
87-86-5	Pentachlorophenol	47	U	47	47
85-01-8	Phenanthrene	9.4	U	9.4	9.4
108-95-2	Phenol	9.4	U	9.4	9.4
129-00-0	Pyrene	9.4	U	9.4	9.4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW01P-1207
Lab Sample ID: 680-32610-12
Matrix: Water
Lab File ID: t5050.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 1060 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 19:10
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 10
TIC Total: 140.9

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.14	~~32~~	~~A~~ B,BL
	Unknown	4.01	5.0	
112-80-1	Oleic Acid	9.40	8.4	N
	Unknown	9.55	40	
123-95-5	Octadecanoic acid, butyl ester	10.19	~~28~~	~~N~~ B,BL
593-45-3	Octadecane	10.23	4.5	N
629-94-7	Heneicosane	10.54	5.0	N
629-94-7	Heneicosane	10.85	5.4	N
112-95-8	Eicosane	11.46	3.9	N
	Unknown	14.15	8.7	

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GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW04-1207
Lab Sample ID: 680-32635-1
Matrix: Water
Lab File ID: t5060.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 22:46
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW04-1207
Lab Sample ID: 680-32635-1
Matrix: Water
Lab File ID: t5060.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 22:46
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW04-1207
Lab Sample ID: 680-32635-1
Matrix: Water
Lab File ID: t5060.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 22:46
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 6
TIC Total: 76.6

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	~~37~~	~~A~~ B, PL
	Unknown	4.01	4.5	
	Unknown Organic Acid	9.54	~~14~~	B, PL
	Unknown Organic Acid	10.19	8.6	
	Unknown	14.16	4.5	
	Unknown	14.21	8.0	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW05-1207
Lab Sample ID: 680-32635-3
Matrix: Water
Lab File ID: t5059.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 22:24
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW05-1207
Lab Sample ID: 680-32635-3
Matrix: Water
Lab File ID: t5059.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 22:24
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YBKG-SW05-1207
Lab Sample ID: 680-32635-3
Matrix: Water
Lab File ID: t5059.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 22:24
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 8
TIC Total: 114.2

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	~~41~~	~~A~~ B,BL
	Unknown	4.01	5.4	
	Unknown Organic Acid	9.40	~~5.4~~	~~B,BL~~
	Unknown	9.54	27	
123-95-5	Octadecanoic acid, butyl ester	10.19	~~18~~	~~N~~ B,BL
593-45-3	Octadecane	10.54	4.2	N
	Unknown	10.84	6.3	
	Unknown	14.15	6.9	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207
Lab Sample ID: 680-32635-5
Matrix: Water
Lab File ID: t5061.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 23:08
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.6	U R,SEL	9.6	9.6
108-60-1	2,2'-oxybis[1-chloropropane]	9.6	U	9.6	9.6
95-95-4	2,4,5-Trichlorophenol	9.6	U	9.6	9.6
88-06-2	2,4,6-Trichlorophenol	9.6	U	9.6	9.6
120-83-2	2,4-Dichlorophenol	9.6	U	9.6	9.6
105-67-9	2,4-Dimethylphenol	9.6	U	9.6	9.6
51-28-5	2,4-Dinitrophenol	48	U	48	48
121-14-2	2,4-Dinitrotoluene	9.6	U	9.6	9.6
606-20-2	2,6-Dinitrotoluene	9.6	U	9.6	9.6
91-58-7	2-Chloronaphthalene	9.6	U	9.6	9.6
95-57-8	2-Chlorophenol	9.6	U	9.6	9.6
95-48-7	2-Methylphenol	9.6	U	9.6	9.6
88-74-4	2-Nitroaniline	48	U	48	48
88-75-5	2-Nitrophenol	9.6	U	9.6	9.6
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	48	U	48	48
534-52-1	4,6-Dinitro-2-methylphenol	48	U	48	48
101-55-3	4-Bromophenyl phenyl ether	9.6	U	9.6	9.6
59-50-7	4-Chloro-3-methylphenol	9.6	U	9.6	9.6
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.6	U	9.6	9.6
106-44-5	4-Methylphenol	9.6	U	9.6	9.6
100-01-6	4-Nitroaniline	48	U	48	48
100-02-7	4-Nitrophenol	48	U	48	48
83-32-9	Acenaphthene	9.6	U	9.6	9.6
208-96-8	Acenaphthylene	9.6	U	9.6	9.6
98-86-2	Acetophenone	9.6	U	9.6	9.6
120-12-7	Anthracene	9.6	U	9.6	9.6
1912-24-9	Atrazine	9.6	U	9.6	9.6
100-52-7	Benzaldehyde	9.6	U	9.6	9.6
56-55-3	Benzo[a]anthracene	9.6	U	9.6	9.6
50-32-8	Benzo[a]pyrene	9.6	U	9.6	9.6
205-99-2	Benzo[b]fluoranthene	9.6	U	9.6	9.6
191-24-2	Benzo[g,h,i]perylene	9.6	U	9.6	9.6
207-08-9	Benzo[k]fluoranthene	9.6	U	9.6	9.6

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207
Lab Sample ID: 680-32635-5
Matrix: Water
Lab File ID: t5061.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 23:08
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.6	U R,SQL	9.6	9.6
111-44-4	Bis(2-chloroethyl)ether	9.6	U	9.6	9.6
117-81-7	Bis(2-ethylhexyl) phthalate	9.6	U	9.6	9.6
85-68-7	Butyl benzyl phthalate	9.6	U	9.6	9.6
105-60-2	Caprolactam	9.6	U	9.6	9.6
86-74-8	Carbazole	9.6	U	9.6	9.6
218-01-9	Chrysene	9.6	U	9.6	9.6
53-70-3	Dibenz(a,h)anthracene	9.6	U	9.6	9.6
132-64-9	Dibenzofuran	9.6	U	9.6	9.6
84-66-2	Diethyl phthalate	9.6	U	9.6	9.6
131-11-3	Dimethyl phthalate	9.6	U	9.6	9.6
84-74-2	Di-n-butyl phthalate	9.6	U	9.6	9.6
117-84-0	Di-n-octyl phthalate	9.6	U	9.6	9.6
206-44-0	Fluoranthene	9.6	U	9.6	9.6
86-73-7	Fluorene	9.6	U	9.6	9.6
118-74-1	Hexachlorobenzene	9.6	U	9.6	9.6
87-68-3	Hexachlorobutadiene	9.6	U	9.6	9.6
77-47-4	Hexachlorocyclopentadiene	9.6	U	9.6	9.6
67-72-1	Hexachloroethane	9.6	U	9.6	9.6
193-39-5	Indeno[1,2,3-cd]pyrene	9.6	U	9.6	9.6
78-59-1	Isophorone	9.6	U	9.6	9.6
91-20-3	Naphthalene	9.6	U	9.6	9.6
98-95-3	Nitrobenzene	9.6	U	9.6	9.6
621-64-7	N-Nitrosodi-n-propylamine	9.6	U	9.6	9.6
86-30-6	N-Nitrosodiphenylamine	9.6	U	9.6	9.6
87-86-5	Pentachlorophenol	48	U	48	48
85-01-8	Phenanthrene	9.6	U	9.6	9.6
108-95-2	Phenol	9.6	U	9.6	9.6
129-00-0	Pyrene	9.6	U	9.6	9.6

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207
Lab Sample ID: 680-32635-5
Matrix: Water
Lab File ID: t5061.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 23:08
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 5
TIC Total: 73.7

CAS No.	Compound Name	RT	Result	Q
	Unknown Organic Acid	9.54	~~34~~	B,BL
646-13-9	Octadecanoic acid, 2-methylpropyl ester	10.19	23	N
629-92-5	Nonadecane	10.84	4.7	N
	Unknown	14.15	7.4	
	Unknown	14.20	4.6	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207 RE
Lab Sample ID: 680-32635-5 RE
Matrix: Water
Lab File ID: t5104.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1060 (mL)
Date Extracted: 01/08/2008 14:00
Level: (low/med) Low
Date Analyzed: 01/11/2008 15:56
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95736
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U H	9.4	9.4
108-60-1	2,2'-oxybis[1-chloropropane]	9.4	U H	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U H	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U H	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U H	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U H	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U H	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U H	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U H	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U H	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U H	9.4	9.4
95-48-7	2-Methylphenol	9.4	U H	9.4	9.4
88-74-4	2-Nitroaniline	47	U H	47	47
88-75-5	2-Nitrophenol	9.4	U H	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U H	19	19
99-09-2	3-Nitroaniline	47	U H	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U H	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U H	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U H	9.4	9.4
106-47-8	4-Chloroaniline	19	U H	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U H	9.4	9.4
106-44-5	4-Methylphenol	9.4	U H	9.4	9.4
100-01-6	4-Nitroaniline	47	U H	47	47
100-02-7	4-Nitrophenol	47	U H	47	47
83-32-9	Acenaphthene	9.4	U H	9.4	9.4
208-96-8	Acenaphthylene	9.4	U H	9.4	9.4
98-86-2	Acetophenone	9.4	U H	9.4	9.4
120-12-7	Anthracene	9.4	U H	9.4	9.4
1912-24-9	Atrazine	9.4	U H	9.4	9.4
100-52-7	Benzaldehyde	9.4	U H	9.4	9.4
56-55-3	Benzo[a]anthracene	9.4	U H	9.4	9.4
50-32-8	Benzo[a]pyrene	9.4	U H	9.4	9.4
205-99-2	Benzo[b]fluoranthene	9.4	U H	9.4	9.4
191-24-2	Benzo[g,h,i]perylene	9.4	U H	9.4	9.4
207-08-9	Benzo[k]fluoranthene	9.4	U H	9.4	9.4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS08-SW01-1207 RE | Lab Sample ID: 680-32635-5 RE

Matrix: Water | Lab File ID: t5104.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 1060 (mL) | Date Extracted: 01/08/2008 14:00

Level: (low/med) Low | Date Analyzed: 01/11/2008 15:56

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95736 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.4	U H R,RE	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U H	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U H	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U H	9.4	9.4
105-60-2	Caprolactam	9.4	U H	9.4	9.4
86-74-8	Carbazole	9.4	U H	9.4	9.4
218-01-9	Chrysene	9.4	U H	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U H	9.4	9.4
132-64-9	Dibenzofuran	9.4	U H	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U H	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U H	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U H	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U H	9.4	9.4
206-44-0	Fluoranthene	9.4	U H	9.4	9.4
86-73-7	Fluorene	9.4	U H	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U H	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U H	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U H	9.4	9.4
67-72-1	Hexachloroethane	9.4	U H	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U H	9.4	9.4
78-59-1	Isophorone	9.4	U H	9.4	9.4
91-20-3	Naphthalene	9.4	U H	9.4	9.4
98-95-3	Nitrobenzene	9.4	U H	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U H	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U H	9.4	9.4
87-86-5	Pentachlorophenol	47	U H	47	47
85-01-8	Phenanthrene	9.4	U H	9.4	9.4
108-95-2	Phenol	9.4	U H	9.4	9.4
129-00-0	Pyrene	9.4	U H	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS08-SW01-1207 RE | Lab Sample ID: 680-32635-5 RE

Matrix: Water | Lab File ID: t5104.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 1060 (mL) | Date Extracted: 01/08/2008 14:00

Level: (low/med) Low | Date Analyzed: 01/11/2008 15:56

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95736 | Units: ug/L

Number TICs Found: 1 | TIC Total: 38

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.09	38	H A ~~A~~ RE

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-EB01-121107
Lab Sample ID: 680-32635-7
Matrix: Water
Lab File ID: t5062.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 23:29
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-EB01-121107
Lab Sample ID: 680-32635-7
Matrix: Water
Lab File ID: t5062.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 23:29
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-EB01-121107
Lab Sample ID: 680-32635-7
Matrix: Water
Lab File ID: t5062.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 23:29
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 7
TIC Total: 122.4

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	34	A B,BL
	Unknown	9.54	39	
123-95-5	Octadecanoic acid, butyl ester	10.19	28	N B,BL
646-31-1	Tetracosane	10.23	4.1	N
112-95-8	Eicosane	10.54	4.1	N
54833-48-6	Heptadecane, 2,6,10,15-tetramethyl-	10.84	7.3	N
	Unknown	14.15	5.9	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS12-FB01-121107
Lab Sample ID: 680-32635-10
Matrix: Water
Lab File ID: t5056.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 21:19
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-FB01-121107 | Lab Sample ID: 680-32635-10

Matrix: Water | Lab File ID: t5056.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 1030 (mL) | Date Extracted: 12/14/2007 14:50

Level: (low/med) Low | Date Analyzed: 01/06/2008 21:19

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95286 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-FB01-121107 | Lab Sample ID: 680-32635-10

Matrix: Water | Lab File ID: t5056.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 1030 (mL) | Date Extracted: 12/14/2007 14:50

Level: (low/med) Low | Date Analyzed: 01/06/2008 21:19

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95286 | Units: ug/L

Number TICs Found: 5 | TIC Total: 82.3

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	33	A
	Unknown Organic Acid	9.54	23	
	Unknown	10.19	17	
629-78-7	Heptadecane	10.85	4.2	N
	Unknown	14.15	5.1	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-GW23-1207 | Lab Sample ID: 680-32635-11

Matrix: Water | Lab File ID: t5096.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 1020 (mL) | Date Extracted: 12/14/2007 14:50

Level: (low/med) Low | Date Analyzed: 01/08/2008 11:26

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95374 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.8	U	9.8	9.8
108-60-1	2,2'-oxybis[1-chloropropane]	9.8	U	9.8	9.8
95-95-4	2,4,5-Trichlorophenol	9.8	U	9.8	9.8
88-06-2	2,4,6-Trichlorophenol	9.8	U	9.8	9.8
120-83-2	2,4-Dichlorophenol	9.8	U	9.8	9.8
105-67-9	2,4-Dimethylphenol	9.8	U	9.8	9.8
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.8	U	9.8	9.8
606-20-2	2,6-Dinitrotoluene	9.8	U	9.8	9.8
91-58-7	2-Chloronaphthalene	9.8	U	9.8	9.8
95-57-8	2-Chlorophenol	9.8	U	9.8	9.8
95-48-7	2-Methylphenol	9.8	U	9.8	9.8
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.8	U	9.8	9.8
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.8	U	9.8	9.8
59-50-7	4-Chloro-3-methylphenol	9.8	U	9.8	9.8
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	9.8	U	9.8	9.8
106-44-5	4-Methylphenol	9.8	U	9.8	9.8
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.8	U	9.8	9.8
208-96-8	Acenaphthylene	9.8	U	9.8	9.8
98-86-2	Acetophenone	9.8	U	9.8	9.8
120-12-7	Anthracene	9.8	U	9.8	9.8
1912-24-9	Atrazine	9.8	U	9.8	9.8
100-52-7	Benzaldehyde	9.8	U	9.8	9.8
56-55-3	Benzo[a]anthracene	9.8	U	9.8	9.8
50-32-8	Benzo[a]pyrene	9.8	U	9.8	9.8
205-99-2	Benzo[b]fluoranthene	9.8	U	9.8	9.8
191-24-2	Benzo[g,h,i]perylene	9.8	U	9.8	9.8
207-08-9	Benzo[k]fluoranthene	9.8	U	9.8	9.8

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS12-GW23-1207
Lab Sample ID: 680-32635-11
Matrix: Water
Lab File ID: t5096.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1020 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/08/2008 11:26
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95374
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.8	U	9.8	9.8
111-44-4	Bis(2-chloroethyl)ether	9.8	U	9.8	9.8
117-81-7	Bis(2-ethylhexyl) phthalate	9.8	U	9.8	9.8
85-68-7	Butyl benzyl phthalate	9.8	U	9.8	9.8
105-60-2	Caprolactam	9.8	U	9.8	9.8
86-74-8	Carbazole	9.8	U	9.8	9.8
218-01-9	Chrysene	9.8	U	9.8	9.8
53-70-3	Dibenz(a,h)anthracene	9.8	U	9.8	9.8
132-64-9	Dibenzofuran	9.8	U	9.8	9.8
84-66-2	Diethyl phthalate	9.8	U	9.8	9.8
131-11-3	Dimethyl phthalate	9.8	U	9.8	9.8
84-74-2	Di-n-butyl phthalate	9.8	U	9.8	9.8
117-84-0	Di-n-octyl phthalate	9.8	U	9.8	9.8
206-44-0	Fluoranthene	9.8	U	9.8	9.8
86-73-7	Fluorene	9.8	U	9.8	9.8
118-74-1	Hexachlorobenzene	9.8	U	9.8	9.8
87-68-3	Hexachlorobutadiene	9.8	U	9.8	9.8
77-47-4	Hexachlorocyclopentadiene	9.8	U	9.8	9.8
67-72-1	Hexachloroethane	9.8	U	9.8	9.8
193-39-5	Indeno[1,2,3-cd]pyrene	9.8	U	9.8	9.8
78-59-1	Isophorone	9.8	U	9.8	9.8
91-20-3	Naphthalene	9.8	U	9.8	9.8
98-95-3	Nitrobenzene	9.8	U	9.8	9.8
621-64-7	N-Nitrosodi-n-propylamine	9.8	U	9.8	9.8
86-30-6	N-Nitrosodiphenylamine	9.8	U	9.8	9.8
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.8	U	9.8	9.8
108-95-2	Phenol	9.8	U	9.8	9.8
129-00-0	Pyrene	9.8	U	9.8	9.8

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS12-GW23-1207 | Lab Sample ID: 680-32635-11

Matrix: Water | Lab File ID: t5096.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 1020 (mL) | Date Extracted: 12/14/2007 14:50

Level: (low/med) Low | Date Analyzed: 01/08/2008 11:26

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95374 | Units: ug/L

Number TICs Found: 5 | TIC Total: 108

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.11	~~33~~	~~A~~ B,BL
	Unknown	9.53	32	
123-95-5	Octadecanoic acid, butyl ester	10.18	23	~~N~~ B,BL
791-28-6	Phosphine oxide, triphenyl-	10.84	14	N
	Unknown	14.13	6.0	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS12-EB01-121107
Lab Sample ID: 680-32635-12
Matrix: Water
Lab File ID: t5058.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1000 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 22:03
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	10	U	10	10
108-60-1	2,2'-oxybis[1-chloropropane]	10	U	10	10
95-95-4	2,4,5-Trichlorophenol	10	U	10	10
88-06-2	2,4,6-Trichlorophenol	10	U	10	10
120-83-2	2,4-Dichlorophenol	10	U	10	10
105-67-9	2,4-Dimethylphenol	10	U	10	10
51-28-5	2,4-Dinitrophenol	50	U	50	50
121-14-2	2,4-Dinitrotoluene	10	U	10	10
606-20-2	2,6-Dinitrotoluene	10	U	10	10
91-58-7	2-Chloronaphthalene	10	U	10	10
95-57-8	2-Chlorophenol	10	U	10	10
95-48-7	2-Methylphenol	10	U	10	10
88-74-4	2-Nitroaniline	50	U	50	50
88-75-5	2-Nitrophenol	10	U	10	10
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	50	U	50	50
534-52-1	4,6-Dinitro-2-methylphenol	50	U	50	50
101-55-3	4-Bromophenyl phenyl ether	10	U	10	10
59-50-7	4-Chloro-3-methylphenol	10	U	10	10
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	10	U	10	10
106-44-5	4-Methylphenol	10	U	10	10
100-01-6	4-Nitroaniline	50	U	50	50
100-02-7	4-Nitrophenol	50	U	50	50
83-32-9	Acenaphthene	10	U	10	10
208-96-8	Acenaphthylene	10	U	10	10
98-86-2	Acetophenone	10	U	10	10
120-12-7	Anthracene	10	U	10	10
1912-24-9	Atrazine	10	U	10	10
100-52-7	Benzaldehyde	10	U	10	10
56-55-3	Benzo[a]anthracene	10	U	10	10
50-32-8	Benzo[a]pyrene	10	U	10	10
205-99-2	Benzo[b]fluoranthene	10	U	10	10
191-24-2	Benzo[g,h,i]perylene	10	U	10	10
207-08-9	Benzo[k]fluoranthene	10	U	10	10

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS12-EB01-121107
Lab Sample ID: 680-32635-12
Matrix: Water
Lab File ID: t5058.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1000 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 22:03
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	10	U	10	10
111-44-4	Bis(2-chloroethyl)ether	10	U	10	10
117-81-7	Bis(2-ethylhexyl) phthalate	10	U	10	10
85-68-7	Butyl benzyl phthalate	10	U	10	10
105-60-2	Caprolactam	10	U	10	10
86-74-8	Carbazole	10	U	10	10
218-01-9	Chrysene	10	U	10	10
53-70-3	Dibenz(a,h)anthracene	10	U	10	10
132-64-9	Dibenzofuran	10	U	10	10
84-66-2	Diethyl phthalate	10	U	10	10
131-11-3	Dimethyl phthalate	10	U	10	10
84-74-2	Di-n-butyl phthalate	10	U	10	10
117-84-0	Di-n-octyl phthalate	10	U	10	10
206-44-0	Fluoranthene	10	U	10	10
86-73-7	Fluorene	10	U	10	10
118-74-1	Hexachlorobenzene	10	U	10	10
87-68-3	Hexachlorobutadiene	10	U	10	10
77-47-4	Hexachlorocyclopentadiene	10	U	10	10
67-72-1	Hexachloroethane	10	U	10	10
193-39-5	Indeno[1,2,3-cd]pyrene	10	U	10	10
78-59-1	Isophorone	10	U	10	10
91-20-3	Naphthalene	10	U	10	10
98-95-3	Nitrobenzene	10	U	10	10
621-64-7	N-Nitrosodi-n-propylamine	10	U	10	10
86-30-6	N-Nitrosodiphenylamine	10	U	10	10
87-86-5	Pentachlorophenol	50	U	50	50
85-01-8	Phenanthrene	10	U	10	10
108-95-2	Phenol	10	U	10	10
129-00-0	Pyrene	10	U	10	10

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS12-EB01-121107
Lab Sample ID: 680-32635-12
Matrix: Water
Lab File ID: t5058.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1000 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 22:03
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L
Number TICs Found: 6
TIC Total: 93.3

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	31	A
	Unknown Organic Acid	9.54	29	
123-95-5	Octadecanoic acid, butyl ester	10.19	19	N
629-94-7	Heneicosane	10.54	4.1	N
	Unknown	10.85	5.1	
	Unknown	14.15	5.1	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207 MS
Lab Sample ID: 680-32635-5 MS
Matrix: Water
Lab File ID: t5063.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 23:51
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	43		9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	59		9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	65		9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	70		49	49
83-32-9	Acenaphthene	38		9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207 MS
Lab Sample ID: 680-32635-5 MS
Matrix: Water
Lab File ID: t5063.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1030 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/06/2008 23:51
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95286
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	25		9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	44		9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	72		49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	58		9.7	9.7
129-00-0	Pyrene	37		9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207 MSD
Lab Sample ID: 680-32635-5 MSD
Matrix: Water
Lab File ID: t5098.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/08/2008 12:09
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95374
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.6	U	9.6	9.6
108-60-1	2,2'-oxybis[1-chloropropane]	9.6	U	9.6	9.6
95-95-4	2,4,5-Trichlorophenol	9.6	U	9.6	9.6
88-06-2	2,4,6-Trichlorophenol	9.6	U	9.6	9.6
120-83-2	2,4-Dichlorophenol	9.6	U	9.6	9.6
105-67-9	2,4-Dimethylphenol	9.6	U	9.6	9.6
51-28-5	2,4-Dinitrophenol	48	U	48	48
121-14-2	2,4-Dinitrotoluene	43		9.6	9.6
606-20-2	2,6-Dinitrotoluene	9.6	U	9.6	9.6
91-58-7	2-Chloronaphthalene	9.6	U	9.6	9.6
95-57-8	2-Chlorophenol	64		9.6	9.6
95-48-7	2-Methylphenol	9.6	U	9.6	9.6
88-74-4	2-Nitroaniline	48	U	48	48
88-75-5	2-Nitrophenol	9.6	U	9.6	9.6
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	48	U	48	48
534-52-1	4,6-Dinitro-2-methylphenol	48	U	48	48
101-55-3	4-Bromophenyl phenyl ether	9.6	U	9.6	9.6
59-50-7	4-Chloro-3-methylphenol	70		9.6	9.6
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.6	U	9.6	9.6
106-44-5	4-Methylphenol	9.6	U	9.6	9.6
100-01-6	4-Nitroaniline	48	U	48	48
100-02-7	4-Nitrophenol	72		48	48
83-32-9	Acenaphthene	40		9.6	9.6
208-96-8	Acenaphthylene	9.6	U	9.6	9.6
98-86-2	Acetophenone	9.6	U	9.6	9.6
120-12-7	Anthracene	9.6	U	9.6	9.6
1912-24-9	Atrazine	9.6	U	9.6	9.6
100-52-7	Benzaldehyde	9.6	U	9.6	9.6
56-55-3	Benzo[a]anthracene	9.6	U	9.6	9.6
50-32-8	Benzo[a]pyrene	9.6	U	9.6	9.6
205-99-2	Benzo[b]fluoranthene	9.6	U	9.6	9.6
191-24-2	Benzo[g,h,i]perylene	9.6	U	9.6	9.6
207-08-9	Benzo[k]fluoranthene	9.6	U	9.6	9.6

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS08-SW01-1207 MSD
Lab Sample ID: 680-32635-5 MSD
Matrix: Water
Lab File ID: t5098.d
Analysis Method: OLM04.3/SV
Date Received: 12/12/2007 09:23
Sample wt/vol: 1040 (mL)
Date Extracted: 12/14/2007 14:50
Level: (low/med) Low
Date Analyzed: 01/08/2008 12:09
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95374
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.6	U	9.6	9.6
111-44-4	Bis(2-chloroethyl)ether	9.6	U	9.6	9.6
117-81-7	Bis(2-ethylhexyl) phthalate	9.6	U	9.6	9.6
85-68-7	Butyl benzyl phthalate	9.6	U	9.6	9.6
105-60-2	Caprolactam	9.6	U	9.6	9.6
86-74-8	Carbazole	9.6	U	9.6	9.6
218-01-9	Chrysene	9.6	U	9.6	9.6
53-70-3	Dibenz(a,h)anthracene	9.6	U	9.6	9.6
132-64-9	Dibenzofuran	9.6	U	9.6	9.6
84-66-2	Diethyl phthalate	9.6	U	9.6	9.6
131-11-3	Dimethyl phthalate	9.6	U	9.6	9.6
84-74-2	Di-n-butyl phthalate	9.6	U	9.6	9.6
117-84-0	Di-n-octyl phthalate	9.6	U	9.6	9.6
206-44-0	Fluoranthene	9.6	U	9.6	9.6
86-73-7	Fluorene	9.6	U	9.6	9.6
118-74-1	Hexachlorobenzene	9.6	U	9.6	9.6
87-68-3	Hexachlorobutadiene	9.6	U	9.6	9.6
77-47-4	Hexachlorocyclopentadiene	9.6	U	9.6	9.6
67-72-1	Hexachloroethane	9.6	U	9.6	9.6
193-39-5	Indeno[1,2,3-cd]pyrene	9.6	U	9.6	9.6
78-59-1	Isophorone	9.6	U	9.6	9.6
91-20-3	Naphthalene	9.6	U	9.6	9.6
98-95-3	Nitrobenzene	9.6	U	9.6	9.6
621-64-7	N-Nitrosodi-n-propylamine	44		9.6	9.6
86-30-6	N-Nitrosodiphenylamine	9.6	U	9.6	9.6
87-86-5	Pentachlorophenol	76		48	48
85-01-8	Phenanthrene	9.6	U	9.6	9.6
108-95-2	Phenol	62		9.6	9.6
129-00-0	Pyrene	42		9.6	9.6

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-GW05-1207
Lab Sample ID: 680-32610-1
Matrix: Water
Lab File ID: W0156.D
Analysis Method: 8015B
Date Received: 12/11/2007 09:29
Sample wt/vol: 20 (mL)
Date Analyzed: 12/14/2007 12:54
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: RTX502.2 0.53 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93628
Units: mg/L

CAS No.	Compound Name	Result	Q	RL	MDL
8006-61-9	Gasoline Range Organics (GRO)-C6-C10	0.050	U	0.050	0.012

WM 02/19/08

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-EB01-121007
Lab Sample ID: 680-32610-2
Matrix: Water
Lab File ID: W0157.D
Analysis Method: 8015B
Date Received: 12/11/2007 09:29
Sample wt/vol: 20 (mL)
Date Analyzed: 12/14/2007 13:20
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: RTX502.2 0.53 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93628
Units: mg/L

CAS No.	Compound Name	Result	Q	RL	MDL
8006-61-9	Gasoline Range Organics (GRO)-C6-C10	0.050	U	0.050	0.012

WM 02/19/08

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-FB01-121007
Lab Sample ID: 680-32610-3
Matrix: Water
Lab File ID: W0158.D
Analysis Method: 8015B
Date Received: 12/11/2007 09:29
Sample wt/vol: 20 (mL)
Date Analyzed: 12/14/2007 13:46
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: RTX502.2 0.53 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93628
Units: mg/L

CAS No.	Compound Name	Result	Q	RL	MDL
8006-61-9	Gasoline Range Organics (GRO)-C6-C10	0.050	U	0.050	0.012

UW 02/08

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-1

SDG No.: YORK15

Client Sample ID: YS21-GW05-1207 | Lab Sample ID: 680-32610-1

Matrix: Water | Lab File ID: q1140011.d

Analysis Method: 8015B | Date Received: 12/11/2007 09:29

Sample wt/vol: 1000 (mL) | Date Extracted: 12/13/2007 15:00

Extraction Method: 3520C | Date Analyzed: 12/14/2007 11:46

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: 1 (uL) | GC Column/ID: ZB-5HT 0.32 (mm)

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 93635 | Units: mg/L

CAS No.	Compound Name	Result	Q	RL	MDL
STL00143	C10-C28	0.04	J B,BL	0.1	0.03

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-EB01-121007
Lab Sample ID: 680-32610-2
Matrix: Water
Lab File ID: q1140012.d
Analysis Method: 8015B
Date Received: 12/11/2007 09:29
Sample wt/vol: 1000 (mL)
Date Extracted: 12/13/2007 15:00
Extraction Method: 3520C
Date Analyzed: 12/14/2007 11:57
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume: 1 (uL)
GC Column/ID: ZB-5HT 0.32 (mm)
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 93635
Units: mg/L

CAS No.	Compound Name	Result	Q	RL	MDL
STL00143	C10-C28	0.08	J	0.1	0.03

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-1
SDG No.: YORK15
Client Sample ID: YS21-FB01-121007
Lab Sample ID: 680-32610-3
Matrix: Water
Lab File ID: ql140013.d
Analysis Method: 8015B
Date Received: 12/11/2007 09:29
Sample wt/vol: 1000 (mL)
Date Extracted: 12/13/2007 15:00
Extraction Method: 3520C
Date Analyzed: 12/14/2007 12:09
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume: 1 (uL)
GC Column/ID: ZB-5HT 0.32 (mm)
GPC Cleanup: (Y/N) N
% Moisture:
Analy. Batch No.: 93635
Units: mg/L

CAS No.	Compound Name	Result	Q	RL	MDL
STL00143	C10-C28	0.1	U	0.1	0.03

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW01-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734799

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	1480			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	34.0	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	117000			P
7440-43-9	Cadmium	0.67	J	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	2.2	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	1680			P
7439-95-4	Magnesium	165000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	136			P
7440-23-5	Sodium	1380000			P
7440-02-0	Nickel	1.1	J	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	54900		J E SD	P
7782-49-2	Selenium	35.0	U	UL BL	P
7440-28-0	Thallium	3.2	J	B BL	P
7440-62-2	Vanadium	2.4	J		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U	UL BL	AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW01-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734800

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	188	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	29.7	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	107000			P
7440-43-9	Cadmium	0.53	J	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.44	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	30.8	J		P
7439-95-4	Magnesium	134000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	127			P
7440-23-5	Sodium	1170000			P
7440-02-0	Nickel	1.4	J	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	45300		J E SD	P
7782-49-2	Selenium	35.0	U	UL BL	P
7440-28-0	Thallium	4.8	J	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	11.8	J		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW01P-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734801

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	1220			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	3.6	J		P
7440-39-3	Barium	34.6	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	116000			P
7440-43-9	Cadmium	0.77	J	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	1.8	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	1340			P
7439-95-4	Magnesium	164000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	128			P
7440-23-5	Sodium	1380000			P
7440-02-0	Nickel	0.92	J	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	54600		J E SD	P
7782-49-2	Selenium	35.0	U	UL BL	P
7440-28-0	Thallium	4.3	J	B BL	P
7440-62-2	Vanadium	1.3	J		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U	UL BL	AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW01P-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734802

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	185	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	27.6	J		P
7440-41-7	Beryllium	0.13	J		P
7440-70-2	Calcium	106000			P
7440-43-9	Cadmium	0.68	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.59	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	42.9	J		P
7439-95-4	Magnesium	131000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	126			P
7440-23-5	Sodium	1150000			P
7440-02-0	Nickel	1.9	~~J~~	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	44600		J ~~E~~ SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	5.6	~~J~~	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	9.3	J		P

JAC 222268

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW04-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734941

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	809			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.3	J	B BL	P
7440-39-3	Barium	33.6	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	232000			P
7440-43-9	Cadmium	0.66	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.84	J	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	598			P
7439-95-4	Magnesium	665000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	45.1			P
7440-23-5	Sodium	6000000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	213000		J E SD	P
7782-49-2	Selenium	35.0	U	UL BL	P
7440-28-0	Thallium	5.0	J	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U	UL BL	AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW04-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734942

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	327		K OT	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	5.5	~~J~~	B BL	P
7440-39-3	Barium	31.8	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	235000			P
7440-43-9	Cadmium	0.99	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.39	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	78.6	~~J~~	K OT	P
7439-95-4	Magnesium	665000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	34.8			P
7440-23-5	Sodium	5990000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	206000		J ~~E~~ SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	5.7	~~J~~	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW05-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734943

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	677			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.1	~~J~~	B BL	P
7440-39-3	Barium	35.4	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	218000			P
7440-43-9	Cadmium	0.86	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.62	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	511			P
7439-95-4	Magnesium	601000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	53.3			P
7440-23-5	Sodium	4940000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	181000		J ~~E~~ SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	5.0	~~J~~	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	~~U~~	UL BL	AS

JAC 22208

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW05-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734944

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	300		K OT	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	30.8	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	217000			P
7440-43-9	Cadmium	0.67	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	37.9	J	K OT	P
7439-95-4	Magnesium	594000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	42.7			P
7440-23-5	Sodium	5370000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	183000		J E SD	P
7782-49-2	Selenium	35.0	U	UL BL	P
7440-28-0	Thallium	4.2	J	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SW01-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734945

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	574			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.2		B BL	P
7440-39-3	Barium	36.9	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	224000			P
7440-43-9	Cadmium	1.1	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.38	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	370			P
7439-95-4	Magnesium	627000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	45.4			P
7440-23-5	Sodium	5590000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	192000		~~J~~ E SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	6.6	~~J~~	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	~~U~~	UL BL	AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SW01-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734946

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	315		K OT	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.2	~~J~~	B BL	P
7440-39-3	Barium	35.3	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	212000			P
7440-43-9	Cadmium	0.33	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	77.4	~~J~~	K OT	P
7439-95-4	Magnesium	575000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	42.7			P
7440-23-5	Sodium	4920000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	176000		J ~~E~~ SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	6.2	~~J~~	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

BLC 22308

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-GW23-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734937

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	530			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.3	~~J~~	B BL	P
7440-39-3	Barium	34.6	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	95300			P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	1.9	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	125		K OT	P
7439-95-4	Magnesium	3510	J		P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	11.0	J		P
7440-23-5	Sodium	27700			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	10200		J E SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	25.0	~~U~~	UL BL	P
7440-62-2	Vanadium	3.1	~~J~~	B BL	P
7440-66-6	Zinc	7.2	J		P
57-12-5	Cyanide	10.0	~~U~~	UL BL	AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-GW23-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734938

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	434			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	32.3	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	94200			P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	1.0	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	3550	J		P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	9.9	J	B BL	P
7440-23-5	Sodium	27500			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	10000		J E SD	P
7782-49-2	Selenium	35.0	U	UL BL	P
7440-28-0	Thallium	25.0	U	UL BL	P
7440-62-2	Vanadium	2.5	J	B BL	P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS21-GW05-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734803

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	966			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.1	J		P
7440-39-3	Barium	23.4	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	114000			P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	3.1	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	1460			P
7439-95-4	Magnesium	3400	J		P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	26.7			P
7440-23-5	Sodium	9370		K OT	P
7440-02-0	Nickel	1.8	J	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	1580	J	J E SD	P
7782-49-2	Selenium	35.0	U	UL BL	P
7440-28-0	Thallium	2.1	J	B BL	P
7440-62-2	Vanadium	5.1	J		P
7440-66-6	Zinc	5.4	J		P
57-12-5	Cyanide	10.0	U	UL BL	AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS21-GW05-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734804

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	155	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	3.8	J		P
7440-39-3	Barium	21.4	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	107000			P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.21	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	26.0	J		P
7439-95-4	Magnesium	3070	J		P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	22.3			P
7440-23-5	Sodium	8290		B OT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	1260	~~J~~	J ~~E~~ SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SW03-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734793

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	2000			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.8	J		P
7440-39-3	Barium	40.7	J		P
7440-41-7	Beryllium	0.27	J		P
7440-70-2	Calcium	229000			P
7440-43-9	Cadmium	0.91	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	2.6	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	1660			P
7439-95-4	Magnesium	655000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	72.3			P
7440-23-5	Sodium	5540000			P
7440-02-0	Nickel	1.2	~~J~~	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	190000		J ~~E~~ SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	7.3	~~J~~	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	~~U~~	UL BL	AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SW03-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734794

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	360			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	34.5	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	231000			P
7440-43-9	Cadmium	1.2	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.30	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	50.1	J		P
7439-95-4	Magnesium	666000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	47.3			P
7440-23-5	Sodium	5720000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	204000		J ~~E~~ SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	6.4	~~J~~	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

XICOM 22308

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Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

134A

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SW01-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734795

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	586			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	37.9	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	209000			P
7440-43-9	Cadmium	0.75	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.74	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	391			P
7439-95-4	Magnesium	566000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	67.6			P
7440-23-5	Sodium	4540000			P
7440-02-0	Nickel	1.5	~~J~~	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	162000		J ~~E~~ SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	8.0	~~J~~	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	~~U~~	UL BL	AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SW01-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734796

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	317			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	5.0	J		P
7440-39-3	Barium	33.9	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	206000			P
7440-43-9	Cadmium	0.71	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	3.2	J		P
7439-89-6	Iron	42.7	J		P
7439-95-4	Magnesium	554000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	61.9			P
7440-23-5	Sodium	4460000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	160000		J E SD	P
7782-49-2	Selenium	35.0	~~U~~	UL BL	P
7440-28-0	Thallium	4.9	~~J~~	B BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-EB01-121107

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734947

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	300	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	4720	J	K OT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	205	J	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-EB01-121107F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734948

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	625	J	K QT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

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Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-EB01-121107

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734939

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	5000	U		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

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Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-EB01-121107F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734940

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	5000	U		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-FB01-121107

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734935

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.22	J		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.18	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	22.3	J	K OT	P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	0.24	J		P
7440-23-5	Sodium	5000	U		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	2.9	J		P
7440-09-7	Potassium	5000	U	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-FB01-121107F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734936

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.20	J		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.17	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	0.28	J		P
7440-23-5	Sodium	5000	U		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS21-EB01-121007

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734805

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.17	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	92.8	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	0.64	J		P
7440-23-5	Sodium	1110	J	K OT	P
7440-02-0	Nickel	0.88	J		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS21-EB01-121007F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734806

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	338	J		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.30	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	116	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	0.15	J		P
7440-23-5	Sodium	820	J	K DT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS21-FB01-121007

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734807

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	65.7	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	659	~~J~~	K OT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U	~~E~~	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS21-FB01-121007F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734808

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	53.2	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	576	J	K OT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-EB01-121007

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734797

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	416	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	5100		K OT	P
7440-02-0	Nickel	0.89	J		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	198	J	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-EB01-121007F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Lab Sample ID: 734798

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.16	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	225	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	2790	J	K OT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	135	J	E	P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1000 / mL
Work Order: KD4V21AA
Dilution factor: 1
Moisture %:NA

Date Received: 12/12/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YS22-SW03-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.10	U
72-55-9	4,4'-DDE	0.10	U
50-29-3	4,4'-DDT	0.10	U
60-57-1	Dieldrin	0.10	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
72-20-8	Endrin	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
53494-70-5	Endrin ketone	0.10	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	1.0	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	1.0	U
53469-21-9	Aroclor 1242	1.0	U
12672-29-6	Aroclor 1248	1.0	U
11097-69-1	Aroclor 1254	1.0	U
11096-82-5	Aroclor 1260	1.0	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1010 / mL
Work Order: KD4V91AA
Dilution factor: 0.99
Moisture %:NA

Date Received: 12/12/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YSA14-SW01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.099	U
72-55-9	4,4'-DDE	0.099	U
50-29-3	4,4'-DDT	0.099	U
60-57-1	Dieldrin	0.099	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.099	U
1031-07-8	Endosulfan sulfate	0.099	U
72-20-8	Endrin	0.099	U
7421-93-4	Endrin aldehyde	0.099	U
53494-70-5	Endrin ketone	0.099	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	0.99	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	0.99	U
53469-21-9	Aroclor 1242	0.99	U
12672-29-6	Aroclor 1248	0.99	U
11097-69-1	Aroclor 1254	0.99	U
11096-82-5	Aroclor 1260	0.99	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 003
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1050 / mL
Work Order: KD4WF1AA
Dilution factor: 0.95
Moisture %:NA

Date Received: 12/12/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YSA14-EB01-121007

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.048	U
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
5103-71-9	alpha-Chlordane	0.048	U
5103-74-2	gamma-Chlordane	0.048	U
72-54-8	4,4'-DDD	0.095	U
72-55-9	4,4'-DDE	0.095	U
50-29-3	4,4'-DDT	0.095	U
60-57-1	Dieldrin	0.095	U
959-98-8	Endosulfan I	0.048	U
33213-65-9	Endosulfan II	0.095	U
1031-07-8	Endosulfan sulfate	0.095	U
72-20-8	Endrin	0.095	U
7421-93-4	Endrin aldehyde	0.095	U
53494-70-5	Endrin ketone	0.095	U
76-44-8	Heptachlor	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
72-43-5	Methoxychlor	0.48	U
12674-11-2	Aroclor 1016	0.95	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.95	U
53469-21-9	Aroclor 1242	0.95	U
12672-29-6	Aroclor 1248	0.95	U
11097-69-1	Aroclor 1254	0.95	U
11096-82-5	Aroclor 1260	0.95	U
8001-35-2	Toxaphene	4.8	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 004
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1050 / mL
Work Order: KD4WH1AA
Dilution factor: 0.95
Moisture %:NA

Date Received: 12/12/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YBKG-SW01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.048	U
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
5103-71-9	alpha-Chlordane	0.048	U
5103-74-2	gamma-Chlordane	0.048	U
72-54-8	4,4'-DDD	0.095	U
72-55-9	4,4'-DDE	0.095	U
50-29-3	4,4'-DDT	0.095	U
60-57-1	Dieldrin	0.095	U
959-98-8	Endosulfan I	0.048	U
33213-65-9	Endosulfan II	0.095	U
1031-07-8	Endosulfan sulfate	0.095	U
72-20-8	Endrin	0.095	U
7421-93-4	Endrin aldehyde	0.095	U
53494-70-5	Endrin ketone	0.095	U
76-44-8	Heptachlor	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
72-43-5	Methoxychlor	0.48	U
12674-11-2	Aroclor 1016	0.95	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.95	U
53469-21-9	Aroclor 1242	0.95	U
12672-29-6	Aroclor 1248	0.95	U
11097-69-1	Aroclor 1254	0.95	U
11096-82-5	Aroclor 1260	0.95	U
8001-35-2	Toxaphene	4.8	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 005
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1050 / mL
Work Order: KD4WM1AA
Dilution factor: 0.95
Moisture %:NA

Date Received: 12/12/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YBKG-SW01P-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.048	U
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
5103-71-9	alpha-Chlordane	0.048	U
5103-74-2	gamma-Chlordane	0.048	U
72-54-8	4,4'-DDD	0.095	U
72-55-9	4,4'-DDE	0.095	U
50-29-3	4,4'-DDT	0.095	U
60-57-1	Dieldrin	0.095	U
959-98-8	Endosulfan I	0.048	U
33213-65-9	Endosulfan II	0.095	U
1031-07-8	Endosulfan sulfate	0.095	U
72-20-8	Endrin	0.095	U
7421-93-4	Endrin aldehyde	0.095	U
53494-70-5	Endrin ketone	0.095	U
76-44-8	Heptachlor	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
72-43-5	Methoxychlor	0.48	U
12674-11-2	Aroclor 1016	0.95	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.95	U
53469-21-9	Aroclor 1242	0.95	U
12672-29-6	Aroclor 1248	0.95	U
11097-69-1	Aroclor 1254	0.95	U
11096-82-5	Aroclor 1260	0.95	U
8001-35-2	Toxaphene	4.8	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 006
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1010 / mL
Work Order: KD4WP1AA
Dilution factor: 0.99
Moisture %:NA

Date Received: 12/12/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YS21-GW05-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.099	U
72-55-9	4,4'-DDE	0.099	U
50-29-3	4,4'-DDT	0.099	U
60-57-1	Dieldrin	0.099	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.099	U
1031-07-8	Endosulfan sulfate	0.099	U
72-20-8	Endrin	0.099	U
7421-93-4	Endrin aldehyde	0.099	U
53494-70-5	Endrin ketone	0.099	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	0.99	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	0.99	U
53469-21-9	Aroclor 1242	0.99	U
12672-29-6	Aroclor 1248	0.99	U
11097-69-1	Aroclor 1254	0.99	U
11096-82-5	Aroclor 1260	0.99	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 007
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1000 / mL
Work Order: KD4WV1AA
Dilution factor: 1
Moisture %:NA

Date Received: 12/12/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YS21-EB01-121007

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.10	U
72-55-9	4,4'-DDE	0.10	U
50-29-3	4,4'-DDT	0.10	U
60-57-1	Dieldrin	0.10	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
72-20-8	Endrin	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
53494-70-5	Endrin ketone	0.10	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	1.0	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	1.0	U
53469-21-9	Aroclor 1242	1.0	U
12672-29-6	Aroclor 1248	1.0	U
11097-69-1	Aroclor 1254	1.0	U
11096-82-5	Aroclor 1260	1.0	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 008
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1000 / mL Date Received: 12/12/07
Work Order: KD4WX1AA Date Extracted:12/14/07
Dilution factor: 1 Date Analyzed: 12/22/07
Moisture %:NA

QC Batch: 7348533

Client Sample Id: YS21-FB01-121007

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.10	U
72-55-9	4,4'-DDE	0.10	U
50-29-3	4,4'-DDT	0.10	U
60-57-1	Dieldrin	0.10	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
72-20-8	Endrin	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
53494-70-5	Endrin ketone	0.10	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	1.0	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	1.0	U
53469-21-9	Aroclor 1242	1.0	U
12672-29-6	Aroclor 1248	1.0	U
11097-69-1	Aroclor 1254	1.0	U
11096-82-5	Aroclor 1260	1.0	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 009
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1000 / mL Date Received: 12/13/07
Work Order: KD4W11AA Date Extracted:12/14/07
Dilution factor: 1 Date Analyzed: 12/22/07
Moisture %:NA

QC Batch: 7348533

Client Sample Id: YBKG-SW04-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.10	U
72-55-9	4,4'-DDE	0.10	U
50-29-3	4,4'-DDT	0.10	U
60-57-1	Dieldrin	0.10	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
72-20-8	Endrin	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
53494-70-5	Endrin ketone	0.10	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	1.0	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	1.0	U
53469-21-9	Aroclor 1242	1.0	U
12672-29-6	Aroclor 1248	1.0	U
11097-69-1	Aroclor 1254	1.0	U
11096-82-5	Aroclor 1260	1.0	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 010
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1000 / mL Date Received: 12/13/07
Work Order: KD4W81AA Date Extracted:12/14/07
Dilution factor: 1 Date Analyzed: 12/22/07
Moisture %:NA

QC Batch: 7348533

Client Sample Id: YBKG-SW05-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.10	U
72-55-9	4,4'-DDE	0.10	U
50-29-3	4,4'-DDT	0.10	U
60-57-1	Dieldrin	0.10	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
72-20-8	Endrin	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
53494-70-5	Endrin ketone	0.10	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	1.0	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	1.0	U
53469-21-9	Aroclor 1242	1.0	U
12672-29-6	Aroclor 1248	1.0	U
11097-69-1	Aroclor 1254	1.0	U
11096-82-5	Aroclor 1260	1.0	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 011
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1010 / mL
Work Order: KD4XA1AA
Dilution factor: 0.99
Moisture %:NA

Date Received: 12/13/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YS08-SW01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.099	U
72-55-9	4,4'-DDE	0.099	U
50-29-3	4,4'-DDT	0.099	U
60-57-1	Dieldrin	0.099	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.099	U
1031-07-8	Endosulfan sulfate	0.099	U
72-20-8	Endrin	0.099	U
7421-93-4	Endrin aldehyde	0.099	U
53494-70-5	Endrin ketone	0.099	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	0.99	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	0.99	U
53469-21-9	Aroclor 1242	0.99	U
12672-29-6	Aroclor 1248	0.99	U
11097-69-1	Aroclor 1254	0.99	U
11096-82-5	Aroclor 1260	0.99	U
8001-35-2	Toxaphene	5.0	U

FORM I

TestAmerica Burlington
MATRIX SPIKE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 011
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1000 / mL
Work Order: KD4XA1AC
Dilution factor: 1
Moisture %:NA

Date Received: 12/13/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YS08-SW01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.362	
58-89-9	gamma-BHC (Lindane)	0.319	
50-29-3	4,4'-DDT	0.822	
60-57-1	Dieldrin	0.851	
72-20-8	Endrin	0.922	
76-44-8	Heptachlor	0.403	

FORM I

TestAmerica Burlington
MATRIX SPIKE DUPLICATE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 011
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1000 / mL
Work Order: KD4XA1AD
Dilution factor: 1
Moisture %:NA

Date Received: 12/13/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YS08-SW01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.380	
58-89-9	gamma-BHC (Lindane)	0.220	a p
50-29-3	4,4'-DDT	0.439	p
60-57-1	Dieldrin	0.852	
72-20-8	Endrin	0.913	
76-44-8	Heptachlor	0.420	

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK15

Matrix: (soil/water) WATER Lab Sample ID:C7L130350 012
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1040 / mL
Work Order: KD4XD1AA
Dilution factor: 0.96
Moisture %:NA

Date Received: 12/13/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YS08-EB01-121107

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.048	U
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
5103-71-9	alpha-Chlordane	0.048	U
5103-74-2	gamma-Chlordane	0.048	U
72-54-8	4,4'-DDD	0.096	U
72-55-9	4,4'-DDE	0.096	U
50-29-3	4,4'-DDT	0.096	U
60-57-1	Dieldrin	0.096	U
959-98-8	Endosulfan I	0.048	U
33213-65-9	Endosulfan II	0.096	U
1031-07-8	Endosulfan sulfate	0.096	U
72-20-8	Endrin	0.096	U
7421-93-4	Endrin aldehyde	0.096	U
53494-70-5	Endrin ketone	0.096	U
76-44-8	Heptachlor	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
72-43-5	Methoxychlor	0.48	U
12674-11-2	Aroclor 1016	0.96	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.96	U
53469-21-9	Aroclor 1242	0.96	U
12672-29-6	Aroclor 1248	0.96	U
11097-69-1	Aroclor 1254	0.96	U
11096-82-5	Aroclor 1260	0.96	U
8001-35-2	Toxaphene	4.8	U

FORM I

TestAmerica Burlington

Client Sample ID: YS22-SW03-1207

HPLC

Lot-Sample #...: G7L120267-001	**Work Order #...:** KD1F11AA	**Matrix.....:** WATER
Date Sampled...: 12/10/07	**Date Received..:** 12/12/07	
Prep Date.....: 12/17/07	**Analysis Date..:** 12/28/07	
Prep Batch #...: 7351258		
Dilution Factor: 1.03	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.31	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.52	ug/L
3-Nitrotoluene	ND	0.52	ug/L
4-Nitrotoluene	ND	0.52	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.26	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	93	(84 - 125)

TestAmerica Burlington

Client Sample ID: YSA14-SW01-1207

HPLC

Lot-Sample #...: G7L120267-002 Work Order #...: KD1F41AA Matrix.....: WATER
Date Sampled...: 12/10/07 Date Received..: 12/12/07
Prep Date.....: 12/17/07 Analysis Date..: 12/28/07
Prep Batch #...: 7351258
Dilution Factor: 0.99 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	0.99	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.99	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	0.99	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.099	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(84 - 125)

TestAmerica Burlington

Client Sample ID: YSA14-EB01-121007

HPLC

Lot-Sample #...: G7L120267-003	**Work Order #...:** KD1F71AA	**Matrix.....:** WATER
Date Sampled...: 12/10/07	**Date Received..:** 12/12/07	
Prep Date.....: 12/17/07	**Analysis Date..:** 12/28/07	
Prep Batch #...: 7351258		
Dilution Factor: 0.96	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.14	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.96	ug/L
1,3-Dinitrobenzene	ND	0.14	ug/L
2,4-Dinitrotoluene	ND	0.14	ug/L
2,6-Dinitrotoluene	ND	0.14	ug/L
HMX	ND	0.14	ug/L
Nitrobenzene	ND	0.14	ug/L
Nitroglycerin	ND	0.96	ug/L
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	ND	0.96	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.14	ug/L
1,3,5-Trinitrobenzene	ND	0.096	ug/L
2,4,6-Trinitrotoluene	ND	0.14	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(84 - 125)

TestAmerica Burlington

Client Sample ID: YBKG-SW01-1207

HPLC

Lot-Sample #...: G7L120267-004 **Work Order #...:** KD1GA1AA **Matrix.....:** WATER
Date Sampled...: 12/10/07 **Date Received..:** 12/12/07
Prep Date.....: 12/17/07 **Analysis Date..:** 12/28/07
Prep Batch #...: 7351258
Dilution Factor: 0.98 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.98	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.98	ug/L
2-Nitrotoluene	ND	0.49	ug/L
3-Nitrotoluene	ND	0.49	ug/L
4-Nitrotoluene	ND	0.49	ug/L
PETN	ND	0.98	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.098	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	97	(84 - 125)

TestAmerica Burlington

Client Sample ID: YBKG-SW01P-1207

HPLC

Lot-Sample #...: G7L120267-005 **Work Order #...:** KD1GK1AA **Matrix.....:** WATER
Date Sampled...: 12/10/07 **Date Received..:** 12/12/07
Prep Date.....: 12/17/07 **Analysis Date..:** 12/28/07
Prep Batch #...: 7351258
Dilution Factor: 0.97 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.97	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.97	ug/L
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	ND	0.97	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.097	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS21-GW05-1207

HPLC

Lot-Sample #...: G7L120267-006	**Work Order #...:** KD1GP1AA	**Matrix.....:** WATER
Date Sampled...: 12/10/07	**Date Received..:** 12/12/07	
Prep Date.....: 12/17/07	**Analysis Date..:** 12/28/07	
Prep Batch #...: 7351258		
Dilution Factor: 0.96	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.14	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.96	ug/L
1,3-Dinitrobenzene	ND	0.14	ug/L
2,4-Dinitrotoluene	ND	0.14	ug/L
2,6-Dinitrotoluene	ND	0.14	ug/L
HMX	ND	0.14	ug/L
Nitrobenzene	ND	0.14	ug/L
Nitroglycerin	ND	0.96	ug/L
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	ND	0.96	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.14	ug/L
1,3,5-Trinitrobenzene	ND	0.096	ug/L
2,4,6-Trinitrotoluene	ND	0.14	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS21-EB01-121007

HPLC

Lot-Sample #...: G7L120267-007	**Work Order #...:** KD1GQ1AA	**Matrix.....:** WATER
Date Sampled...: 12/10/07	**Date Received..:** 12/12/07	
Prep Date.....: 12/17/07	**Analysis Date..:** 12/28/07	
Prep Batch #...: 7351258		
Dilution Factor: 1.03	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.31	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.52	ug/L
3-Nitrotoluene	ND	0.52	ug/L
4-Nitrotoluene	ND	0.52	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.26	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	96	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS21-FB01-121007

HPLC

Lot-Sample #...: G7L120267-008 Work Order #...: KD1GW1AA Matrix.....: WATER
Date Sampled...: 12/10/07 Date Received..: 12/12/07
Prep Date.....: 12/17/07 Analysis Date..: 12/28/07
Prep Batch #...: 7351258
Dilution Factor: 1 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS12-FB01-121107

HPLC

Lot-Sample #...: G7L120267-009 **Work Order #...:** KD5EW1AA **Matrix.....:** WATER
Date Sampled...: 12/11/07 **Date Received..:** 12/13/07
Prep Date.....: 12/17/07 **Analysis Date..:** 12/28/07
Prep Batch #...: 7351258
Dilution Factor: 0.98 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroglycerin	ND	0.98	ug/L
2-Nitrotoluene	ND	0.49	ug/L
3-Nitrotoluene	ND	0.49	ug/L
4-Nitrotoluene	ND	0.49	ug/L
PETN	ND	0.98	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.098	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.98	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS12-GW23-1207

HPLC

Lot-Sample #...: G7L120267-010	**Work Order #...:** KD5E01AA	**Matrix.....:** WATER
Date Sampled...: 12/11/07	**Date Received..:** 12/13/07	
Prep Date.....: 12/17/07	**Analysis Date..:** 12/28/07	
Prep Batch #...: 7351258		
Dilution Factor: 0.99	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	0.99	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.99	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	0.99	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.099	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS12-EB01-121107

HPLC

Lot-Sample #...: G7L120267-011 **Work Order #...:** KD5E51AA **Matrix.....:** WATER
Date Sampled...: 12/11/07 **Date Received..:** 12/13/07
Prep Date.....: 12/17/07 **Analysis Date..:** 12/28/07
Prep Batch #...: 7351258
Dilution Factor: 1.02 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.31	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.51	ug/L
3-Nitrotoluene	ND	0.51	ug/L
4-Nitrotoluene	ND	0.51	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.26	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(84 - 125)

TestAmerica Burlington

Client Sample ID: YBKG-SW04-1207

HPLC

Lot-Sample #...: G7L120267-012 **Work Order #...:** KD5FG1AA **Matrix.....:** WATER
Date Sampled...: 12/11/07 **Date Received..:** 12/13/07
Prep Date.....: 12/17/07 **Analysis Date..:** 12/28/07
Prep Batch #...: 7351258
Dilution Factor: 0.95 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.14	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.28	ug/L
3,5-Dinitroaniline	ND	0.95	ug/L
1,3-Dinitrobenzene	ND	0.14	ug/L
2,4-Dinitrotoluene	ND	0.14	ug/L
2,6-Dinitrotoluene	ND	0.14	ug/L
HMX	ND	0.14	ug/L
Nitrobenzene	ND	0.14	ug/L
Nitroglycerin	ND	0.95	ug/L
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	ND	0.95	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.14	ug/L
1,3,5-Trinitrobenzene	ND	0.095	ug/L
2,4,6-Trinitrotoluene	ND	0.14	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	91	(84 - 125)

TestAmerica Burlington

Client Sample ID: YKBG-SW05-1207

HPLC

Lot-Sample #...: G7L120267-013 **Work Order #...:** KD5FN1AA **Matrix.....:** WATER
Date Sampled...: 12/11/07 **Date Received..:** 12/13/07
Prep Date.....: 12/17/07 **Analysis Date..:** 12/28/07
Prep Batch #...: 7351258
Dilution Factor: 0.96 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.14	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.96	ug/L
1,3-Dinitrobenzene	ND	0.14	ug/L
2,4-Dinitrotoluene	ND	0.14	ug/L
2,6-Dinitrotoluene	ND	0.14	ug/L
HMX	ND	0.14	ug/L
Nitrobenzene	ND	0.14	ug/L
Nitroglycerin	ND	0.96	ug/L
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	ND	0.96	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.14	ug/L
1,3,5-Trinitrobenzene	ND	0.096	ug/L
2,4,6-Trinitrotoluene	ND	0.14	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	91	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS08-SW01-1207

HPLC

Lot-Sample #...: G7L120267-014	**Work Order #...:** KD5FP1AA	**Matrix.....:** WATER
Date Sampled...: 12/11/07	**Date Received..:** 12/13/07	
Prep Date.....: 12/17/07	**Analysis Date..:** 12/29/07	
Prep Batch #...: 7351258		
Dilution Factor: 1.01	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	~~ND~~ R MSL	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	92	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS08-EB01-121107

HPLC

Lot-Sample #...: G7L120267-015	**Work Order #...:** KD5FQ1AA	**Matrix.....:** WATER
Date Sampled...: 12/11/07	**Date Received..:** 12/13/07	
Prep Date.....: 12/17/07	**Analysis Date..:** 12/29/07	
Prep Batch #...: 7351258		
Dilution Factor: 0.96	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.14	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.96	ug/L
1,3-Dinitrobenzene	ND	0.14	ug/L
2,4-Dinitrotoluene	ND	0.14	ug/L
2,6-Dinitrotoluene	ND	0.14	ug/L
HMX	ND	0.14	ug/L
Nitrobenzene	ND	0.14	ug/L
Nitroglycerin	ND	0.96	ug/L
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	ND	0.96	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.14	ug/L
1,3,5-Trinitrobenzene	ND	0.096	ug/L
2,4,6-Trinitrotoluene	ND	0.14	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	96	(84 - 125)

TestAmerica Burlington

Client Sample ID: YSA14-EB01-121007

Dissolved HPLC

Lot-Sample #...:	G7L120267-003	Work Order #...:	KD1F71AC	Matrix.....:	WATER
Date Sampled...:	12/10/07	Date Received..:	12/12/07		
Prep Date.....:	12/26/07	Analysis Date..:	12/29/07		
Prep Batch #...:	7360298				
Dilution Factor:	1	Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS21-GW05-1207

Dissolved HPLC

Lot-Sample #...: G7L120267-006	**Work Order #...:** KD1GP1AC	**Matrix.....:** WATER
Date Sampled...: 12/10/07	**Date Received..:** 12/12/07	
Prep Date.....: 12/26/07	**Analysis Date..:** 12/29/07	
Prep Batch #...: 7360298		
Dilution Factor: 1	**Method.....:** SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS21-EB01-121007

Dissolved HPLC

Lot-Sample #...:	G7L120267-007	Work Order #...:	KD1GQ1AC	Matrix.....:	WATER
Date Sampled...:	12/10/07	Date Received..:	12/12/07		
Prep Date.....:	12/26/07	Analysis Date..:	12/29/07		
Prep Batch #...:	7360298				
Dilution Factor:	1	Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS21-FB01-121007

Dissolved HPLC

Lot-Sample #...:	G7L120267-008	Work Order #...:	KD1GW1AC	Matrix.....:	WATER
Date Sampled...:	12/10/07	Date Received..:	12/12/07		
Prep Date.....:	12/26/07	Analysis Date..:	12/29/07		
Prep Batch #...:	7360298				
Dilution Factor:	1	Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS12-FB01-121107

Dissolved HPLC

Lot-Sample #...:	G7L120267-009	Work Order #...:	KD5EW1AC	Matrix.....:	WATER
Date Sampled...:	12/11/07	Date Received..:	12/13/07		
Prep Date.....:	12/26/07	Analysis Date..:	12/29/07		
Prep Batch #...:	7360298				
Dilution Factor:	1	Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS12-GW23-1207

Dissolved HPLC

Lot-Sample #...: G7L120267-010	**Work Order #...:** KD5E01AC	**Matrix.....:** WATER
Date Sampled...: 12/11/07	**Date Received..:** 12/13/07	
Prep Date.....: 12/26/07	**Analysis Date..:** 12/29/07	
Prep Batch #...: 7360298		
Dilution Factor: 1	**Method.....:** SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS12-EB01-121107

Dissolved HPLC

Lot-Sample #...:	G7L120267-011	Work Order #...:	KD5E51AC	Matrix.....:	WATER
Date Sampled...:	12/11/07	Date Received..:	12/13/07		
Prep Date.....:	12/26/07	Analysis Date..:	12/29/07		
Prep Batch #...:	7360298				
Dilution Factor:	1	Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS08-EB01-121107

Dissolved HPLC

Lot-Sample #...: G7L120267-015	Work Order #...: KD5FQ1AC	Matrix.....: WATER
Date Sampled...: 12/11/07	Date Received..: 12/13/07	
Prep Date.....: 12/26/07	Analysis Date..: 12/29/07	
Prep Batch #...: 7360298		
Dilution Factor: 1	Method.....: SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

January 17, 2008

Ms. Chelsea Bennet
CH2M Hill
5700 Cleveland Street
Suite 101
Virginia Beach, VA 23462

Re: Laboratory Project No. 27000
Case: 27000; SDG: YORK15

Dear Ms. Bennet:

Enclosed are the analytical results for the samples that were received by TestAmerica Burlington on December 11th and 12th, 2007. Laboratory identification numbers were assigned, and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 12/11/07 ETR No: 123348		
734793	YS22-SW03-1207	12/10/07	WATER
734794	YS22-SW03-1207F	12/10/07	FILTRATE
734795	YSA14-SW01-1207	12/10/07	WATER
734796	YSA14-SW01-1207F	12/10/07	FILTRATE
734797	YSA14-EB01-121007	12/10/07	WATER
734798	YSA14-EB01-121007F	12/10/07	FILTRATE
734799	YBKG-SW01-1207	12/10/07	WATER
734800	YBKG-SW01-1207F	12/10/07	FILTRATE
734801	YBKG-SW01P-1207	12/10/07	WATER
734802	YBKG-SW01P-1207F	12/10/07	FILTRATE
734803	YS21-GW05-1207	12/10/07	WATER
734804	YS21-GW05-1207F	12/10/07	FILTRATE
734805	YS21-EB01-121007	12/10/07	WATER
734806	YS21-EB01-121007F	12/10/07	FILTRATE
734807	YS21-FB01-121007	12/10/07	WATER
734808	YS21-FB01-121007F	12/10/07	FILTRATE
	Received: 12/12/07 ETR No: 123369		
734935	YS12-FB01-121107	12/11/07	WATER
734936	YS12-FB01-121107F	12/11/07	FILTRATE
734937	YS12-GW23-1207	12/11/07	WATER
734938	YS12-GW23-1207F	12/11/07	FILTRATE

30 Community Drive, Suite 11 South Burlington, VT 05403 **tel** 802.660.1990 **fax** 802.660.1919 **www.testamericainc.com**

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 12/12/07 ETR No: 123369		
734939	YS12-EB01-121107	12/11/07	WATER
734940	YS12-EB01-121107F	12/11/07	FILTRATE
734941	YBKG-SW04-1207	12/11/07	WATER
734942	YBKG-SW04-1207F	12/11/07	FILTRATE
734943	YBKG-SW05-1207	12/11/07	WATER
734944	YBKG-SW05-1207F	12/11/07	FILTRATE
734945	YS08-SW01-1207	12/11/07	WATER
734945DP	YS08-SW01-1207REP	12/11/07	WATER
734945MS	YS08-SW01-1207MS	12/11/07	WATER
734945MD	YS08-SW01-1207MSD	12/11/07	WATER
734946	YS08-SW01-1207F	12/11/07	FILTRATE
734946DP	YS08-SW01-1207FREP	12/11/07	FILTRATE
734946MS	YS08-SW01-1207FMS	12/11/07	FILTRATE
734947	YS08-EB01-121107	12/11/07	WATER
734948	YS08-EB01-121107F	12/11/07	FILTRATE

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

The samples in this delivery group were received by TAL Burlington. The containers provided for nitroaromatic and nitroguanadine analyses were forwarded to TAL West Sacramento. Any containers provided for Pesticide/PCB analyses were forwarded to TAL Pittsburgh. Analytical data for those fractions is filed at the end of this submittal in sections titled Subcontract Data.

The total and dissolved matrix spikes and duplicates performed during the metals analysis of samples YS08-SW01-1207 and YS08-SW01-1207F yielded acceptable recoveries. The serial dilution performed on the digestate of sample YS08-SW01-1207F did yield results that were within control criterion, while the serial dilution performed on the digestate of sample YS22-GW07-1207 yielded elevated percent difference for potassium.

Any reference within this report to Severn Trent Laboratories, Inc. or STL, should be understood to refer to TestAmerica Laboratories, Inc. (formerly known as Severn Trent Laboratories, Inc.) The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

If there are any questions regarding this submittal, please contact me at 802 660-1990.

Sincerely,

Kristin Dusella

Jim Madison
Project Manager

Enclosure

Chain of Custody Record

Burlington

CTO 195

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M Hill	Project Manager: Laura Cook	Date: 12/10/07	Chain of Custody Number: 367936
Address: 5700 Cleveland St STE 101	Telephone Number (Area Code)/Fax Number: 757 671 8311	Lab Number:	Page 1 of 1
City: Virginia Beach; State: VA; Zip Code: 23462	Site Contact: David Livingston	Lab Contact: Chelsea Barnet	
Project Name and Location (State): NWS Yorktown	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: CTO 195			

Analysis (Attach list if more space needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Explo I Petro Acid Herb Sys Prime	Pest / PCB	Total Metals	Diesel Range Metals	Cyanide	Gasoline Range Aromatics TOC	Metals on Pest Roots						Special Instructions/ Conditions of Receipt
YS22-SW03-1207	12/10/07	1000		X											2	2	1	1	1								
YS22-SD03-1207	12/10/07	1010			X															1	1						
YSA14-SW01-1207	12/10/07	1145		X											2	2	1	1	1								
YSA14-SD01-1207	12/10/07	1155			X															1	1						
YSA14-EB01-121007	12/10/07	1230		X											2	2	1	1	1								Equipment Blank
YBG-SW01-1207	12/10/07	1500		X											2	2	1	1	1								
YBG-SD01-1207	12/10/07	1510			X															1	1						
YBG-SW01P-1207	12/10/07	1505		X											2	2	1	1	1								
YBG-SD01P-1207	12/10/07	1515			X															1	1						
																											* 3 coolers

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [ ] Return To Client [ ] Disposal By Lab [ ] Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: [ ] 24 Hours [ ] 48 Hours [ ] 7 Days [ ] 14 Days [ ] 21 Days [ ] Other Per Contract

QC Requirements (Specify)

1. Relinquished By	Date: 12/10/07	Time: 1800	1. Received By: Jacob L Austin	Date: 12/11/07	Time: 0925
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

[redacted]

BURLINGTON

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M HILL	Project Manager: LAURA COOK	Date: 12/10/07	Chain of Custody Number: 367961
Address: 5700 CLEVELAND ST #101	Telephone Number (Area Code)/Fax Number: (757) 671 6208	Lab Number:	Page 1 of 1
City: VA BEACH; State: VA; Zip Code: 23462	Site Contact: CHELSEA BENNET	Lab Contact:	
Project Name and Location (State): YORKTOWN NWS (VA)	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: CTO-195			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): Pest/PCB 8/8082	EXPL PETN/13,5 DNA Nitroglycerin	Nitroguanidine	Total Nitrs	Diss Nitrs	Cyanide	Special Instructions/ Conditions of Receipt
YS21-GW05-1207	12/10/07	1200		✓			6		2		1		2	2	2	1	1	1	
YS21-EB01-121007	12/10/07	1230		✓			6		2		1		2	2	2	1	1	1	
YS21-FB01-121007	12/10/07	1245		✓			4		2		1		2	1	1	1	1	1	*INTENTIONALLY 1/2 VOLUME BECAUSE RAN OUT OF LAB DI WATER
														*	*				

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other_____

QC Requirements (Specify):

1. Relinquished By: Carol A Peterson	Date: 12/10/07	Time: 1811	1. Received By: Joan L Austin	Date: 12/11/07	Time: 0925
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

190

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

[redacted] BURLINGTON

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M HILL	Project Manager: LAURA COOK	Date: 12/11/07 ~~12/10/07~~ CAP	Chain of Custody Number: 367959
Address: 5700 CLEVELAND ST #101	Telephone Number (Area Code)/Fax Number: (757) 671 6208	Lab Number	Page 1 of 1
City: VA BEACH; State: VA; Zip Code: 23462	Site Contact: CHELSEA BENNET	Lab Contact	
Project Name and Location (State): YORKTOWN NWS (VA)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.: CTO - 195			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): EXPL/PETN/3,5DNA/Nitrosyl	Nitroguanidine	Total Mtl ILM05.3	Diss Mtl ILM05.3	Cyanide	Special Instructions/ Conditions of Receipt
YS12-FB01-121107	12/11/07	1215		✓			4		2		1		2	2	1	1	1	
YS12-GW23-1207	12/11/07	1315		✓			4		2		1		2	2	1	1	1	
YS12-EB01-121107	12/11/07	1430		✓			4		2		1		2	2	1	1	1	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	12/11/07	1700	1. Received By: [signature]	12-12-7	1000
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

CTO-195

Burlington

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

CHAIN OF CUSTODY RECORD

Report to:
Company: CH2M Hill
Address: 5700 Cleveland St Ste 101
Contact: Chelsea Bennett
Phone: 757 671 8311
Fax:
Contract/ Quote: CTO-195

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: ML OST
Sampler's Signature:

Proj. No.: CTO 195
Project Name: NWS Yorktown

ANALYSIS REQUESTED: Explosives (Method 8330) 35 ml; Pesticides/PCBs 1 L; Total Metals 250 ml; Dissolved Metals 250 ml; Cyanide 250 ml; VOC, Aqueous (Sum of 624 Compounds) 40 ml; Metals, CA Reactivity 500 ml; Explosives

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	Explosives (Method 8330)	Pesticides/PCBs	Total Metals	Dissolved Metals	Cyanide	VOC, Aqueous (Sum of 624 Compounds)	Metals, CA Reactivity	Explosives				Lab/Sample ID (Lab Use Only)
W	12/11/07	1020		X	YBG-SW04-1207		4	3		2	2	1	1	1	+	+					
SED	12/11/07	1030		X	YBG-SD04-1207				3						1	1	1				
W	12/11/07	1120		X	YBG-SW05-1207		4	3		2	2	1	1	1							
SED	12/11/07	1130		X	YBG-SD05-1207				3						1	1	1				
W	12/11/07	1345		X	YS08-SW01-1207		12	9		6	6	3	3	3							RUN QC
SED	12/11/07	1355		X	YS08-SD01-1207				9						3	3	3				RUN QC
W	12/11/07	1515		X	YS08-EB01-121107		4	3		2	2	1	1	1							Equipment Blank

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	12/11/07	1830			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature]	12-12-7	1000

Remarks

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other Glass

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

CASE NARRATIVE
TestAmerica Burlington

SDG# YORK15

Sample Receiving:
TestAmerica Pittsburgh received samples on December 12, and 13, 2007. The coolers were received within the proper temperature range.

The chain of custody listed a sampling time of 10:30 for sample YBKG-SW04-1207. The sample bottles had a time of 10:20. The time was logged in off of the chain of custody.

The samples listed on the chain of custody with the prefix YBKG were identified as YBG on the sample bottles. These samples were logged in off of the chain of custody.

The client sent a memo listing sample identifications that were incorrectly entered on the chains of custody. All changes were made and the memo is included in the package.

If project specific QC was not required for samples contained in this report and batch QC was completed on these samples, anomalous results will be discussed below.

Pesticides/PCBs:
The matrix spike duplicate recovered outside of the control limits for gamma-BHC.

The relative percent difference between the matrix spike and the matrix spike duplicate was outside of the control limits for gamma-BHC and 4,4'-DDT.

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDGs affected

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: December 12, 2007

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station, CTO-195.

The following sample IDs were listed incorrectly on COCs, and should be corrected in the lab hardcopy report and electronic deliverables as follows:

Correct Sample ID	Incorrect ID on COC	Date Collected	Time Collid
YBKG-SW04-1207	YBG-SW04-1207	12/11/2007	10:20
YBKG-SD04-1207	YBG-SD04-1207	12/11/2007	10:30
YBKG-SW05-1207	YBG-SW05-1207	12/11/2007	11:20
YBKG-SD05-1207	YBG-SD05-1207	12/11/2007	11:30
YBKG-TB01-121107	YBG-TB01-121107	12/11/2007	00:00

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Several analyses were listed incorrectly on the COCs for samples collected on December 11, 2007 and need to be corrected in the lab hardcopy report, and any electronic deliverables. The Sample table below denotes the correct analyses that should be analyzed per sample. Specific corrections to the COCs are noted below the sample table.

Correct Sample ID	Date Collected	Time Collected	[illegible]	[illegible]	[illegible]	PCB Pesticides	Metals(NJ) Mo,Sn	[illegible]	EPA 8270 MS/SBNA pesticides	nitroglycerin 8332	Nitroguanidine IAPP	[illegible]	Sulfide 376.1	MEE RSK-175	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
YS08-SD01-1207	12/11/2007	13:55	X	X	X	X	X		X	X	X					X		X	X	X		
YS08-EB01-121107	12/11/2007	15:15	X	X	X	X	X	X	X	X	X											
YBKG-SD04-1207	12/11/2007	10:30	X	X	X	X	X		X	X	X					X		X	X	X		
YBKG-SD05-1207	12/11/2007	11:30	X	X	X	X	X		X	X	X					X		X	X	X		

- Samples YS08-SD01-1207, YS08-EB01-121107, YBKG-SD04-1207, YBKG-SD05-1207 should be analyzed for Nitroglycerin 8332 and Nitroguanadine IAPP.

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Intercompany Chain of Custody

SDG/Job Reference YORK15
PO Reference 123348
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/07/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YS22-SW03-1207	734793	WATER	12/10/2007	1000	X
YSA14-SW01-1207	734795	WATER	12/10/2007	1145	X
YSA14-EB01-121007	734797	WATER	12/10/2007	1230	X
YBKG-SW01-1207	734799	WATER	12/10/2007	1500	X
YBKG-SW01P-1207	734801	WATER	12/10/2007	1505	X
YS21-GW05-1207	734803	WATER	12/10/2007	1200	X
YS21-EB01-121007	734805	WATER	12/10/2007	1230	X
YS21-FB01-121007	734807	WATER	12/10/2007	1245	X

Relinquished By: Date: 12/11/7 Time: 1500 Received By: Date: 12/12/07 Time: 1010

YORK15

Intercompany Chain of Custody

SDG/Job Reference	YORK15
PO Reference	123369
Project ID	SUBR7
Project Name	Yorktown NWS
Due Date	1/8/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YBKG-SW04-1207	734941	WATER	12/11/2007	1030	X
YBKG-SW05-1207	734943	WATER	12/11/2007	1120	X
YS08-SW01-1207	734945	WATER	12/11/2007	1345	X
YS08-SW01-1207MS	734945MS	WATER	12/11/2007	1345	X
YS08-SW01-1207MSD	734945MD	WATER	12/11/2007	1345	X
YS08-EB01-121107	734947	WATER	12/11/2007	1515	X

Revised to correct prefix of "YS08"

Relinquished By:	Date:	Time:	Received By:	Date:	Time:

this COC used for Correct sample ID's CAS 12/14/07

Intercompany Chain of Custody

SDG/Job Reference YORK15
PO Reference 123369
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/08/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YBKG-SW04-1207	734941	WATER	12/11/2007	1030	X
YBKG-SW05-1207	734943	WATER	12/11/2007	1120	X
YBKG-SW01-1207	734945	WATER	12/11/2007	1345	X
YBKG-SW01-1207MS	734945MS	WATER	12/11/2007	1345	X
YBKG-SW01-1207MSD	734945MD	WATER	12/11/2007	1345	X
YS08-EB01-121107	734947	WATER	12/11/2007	1515	X

Relinquished By: [signature] Date: 12/12/7 Time: 1530
Received By: [signature] Date: 12/13/07 Time: 1000

Work Order No.: _____

Condition Upon Receipt Variance Report

TestAmerica Pittsburgh Laboratory

Client: TA Rystor Date: 12/14/07

Project No.: _____ Initiated by: _____

Analysis Requested: _____ RFA/COC: _____

Client Sample Numbers Affected: _____

Condition/Variance (Check all that apply):

1. ☑ Not enough sample received for proper analysis. Received approx. _____
2. ☑ Sample received broken/leaking.
3. ☑ Sample received without proper preservative.
   - ☑ Cooler temperature not within 4°C ± 2°C.
     - Record temperature: _____
   - ☑ pH _____
   - ☑ other: _____
4. ☑ Sample received in improper container.
5. ☑ Sample received without proper paperwork.
6. ☑ Paperwork received without sample.
7. ☑ No sample ID on sample container.
8. ☑ Custody tape disturbed/broken/missing.
9. ☑ Sample splits performed by lab.
10. ☑ Volatile sample received with approximately _____ mm headspace.
11. ☑ Sample ID on container does not match on paperwork. Explain:
12. ☑ All coolers on airbill not received with
13. ☑ Other (explain below):

Notes: See back

Corrective Action:

☑ Client's Name: _____ Informed verbally on: _____ By: _____

☑ Client's Name: Jim Madison Informed in writing on: 12/14/07 By: [illegible]

☑ Sample(s) processed "as is" as usual

☑ Sample(s) on hold until: _____ If released: _____

Sample Control Supervisor Review: _____ Date: _____

Project Management Review: [illegible] Date: 12/14/07

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

TA PT/11-07/96-005/CURVR.DOC

YBKG - SW04 - 1207 - ~~CVC~~ bottles says 1020
CVC says 1030

all bottles say YBG - CVC says
YBKG

Cooler Receipt Form

TestAmerica Pittsburgh

Client: TA Buffalo Project: Youngstown Quote: 77432

Cooler Rec'd & Opened for Temp. Check on: 12/12/07

Coolers Opened and Unpacked on: 12/12/07 By: [signature] (Signature)

TestAmerica Pittsburgh Lot Number: C7L130350

		Yes	No
1.	Were custody seals on the outside of the cooler?	✓	
	If YES, how many and where? Quantity 1 Location front		
	Were signatures and date correct?	✓	
2.	Were custody papers included inside the cooler?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did you sign the custody papers in the appropriate place?	✓	
5.	Was shippers packing slip attached to this form?	✓	
6.	Were packing materials used?	✓	
	If YES, what type?		
7.	Were the samples chilled? (Record temperatures on reverse side.)	✓	
8.	Were the samples appropriately preserved?	NA	
9.	Were all bottles sealed in separate plastic bags? [illegible]	✓	✓
10.	Did all bottles arrive in good condition (unbroken)?	✓	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓	
12.	Did all bottle labels and/or tags agree with custody papers?	✓	
13.	Were correct bottles used for tests indicated?	✓	
14.	Were all VOA vials checked for the presence of air bubbles?	NA	
15.	Was a sufficient amount of sample sent in each bottle?	✓	

16. Samples received by: FEDEX UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies:

Level 2 Review

Was contacted on _____ by _____ to resolve discrepancies.

TA PT/Nov-07/96-005/COOL.DOC

Page 1 of 2

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	4.9	10
2	4.2	2

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

The CMW rec'd 12/13/07

CW 12/14/07

TA PT/Nov-07/96-005/COOL.DOC

Cooler Receipt Form

TestAmerica Pittsburgh

Client: TA Buffalo Project: Yorktown Quote: 77432

Cooler Rec'd & Opened for Temp. Check on: 12/13/07

Coolers Opened and Unpacked on: 12/13/07 By: _____

TestAmerica Pittsburgh Lot Number: C7L130350 (Signature)

		Yes	No
1.	Were custody seals on the outside of the cooler?	✓	
	If YES, how many and where? Quantity 1 Location front		
	Were signatures and date correct?	✓	
2.	Were custody papers included inside the cooler?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did you sign the custody papers in the appropriate place?	✓	
5.	Was shippers packing slip attached to this form?	✓	
6.	Were packing materials used?	✓	
	If YES, what type? Bubble Wrap & Ice packs		
7.	Were the samples chilled? (Record temperatures on reverse side.)	✓	
8.	Were the samples appropriately preserved?	NA	
9.	Were all bottles sealed in separate plastic bags?		✓
10.	Did all bottles arrive in good condition (unbroken)?	✓	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓	
12.	Did all bottle labels and/or tags agree with custody papers?	✓	
13.	Were correct bottles used for tests indicated?	✓	
14.	Were all VOA vials checked for the presence of air bubbles?	NA	
15.	Was a sufficient amount of sample sent in each bottle?	✓	

16. Samples received by: (FEDEX) UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies: _____

Level 2 Review _____

Was contacted on _____ by _____ to resolve discrepancies.

TA PT/Nov-07/96-005/COOL.DOC

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	5.4	5
2	5.7	2

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

TA PT/Nov-07/96-005/COOL.DOC

Case Narrative

TestAmerica West Sacramento Project Number G7L120267

WATER, 8330, Nitroaromatics & Nitramines
Sample(s): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
The matrix spike/matrix spike duplicate (MS/MSD) associated with this extraction batch has recoveries and precision outside the established control limits for HMX, Tetryl, and 1,3,5-Trinitrobenzene. Acceptable laboratory control sample (LCS) data demonstrate that the analytical system is in control. This anomaly is most likely matrix related.

There were no other anomalies associated with this project.

Sample Summary

TestAmerica West Sacramento Project Number G7L120267

WO#	Sample #	Client Sample ID	Sampling Date	Received Date
KD1F1	1	YS22-SW03-1207	12/10/2007 10:00 AM	12/12/2007 09:00 AM
KD1F4	2	YSA14-SW01-1207	12/10/2007 11:45 AM	12/12/2007 09:00 AM
KD1F7	3	YSA14-EB01-121007	12/10/2007 12:30 PM	12/12/2007 09:00 AM
KD1GA	4	YBKG-SW01-1207	12/10/2007 03:00 PM	12/12/2007 09:00 AM
KD1GK	5	YBKG-SW01P-1207	12/10/2007 03:05 PM	12/12/2007 09:00 AM
KD1GP	6	YS21-GW05-1207	12/10/2007 12:00 PM	12/12/2007 09:00 AM
KD1GQ	7	YS21-EB01-121007	12/10/2007 12:30 PM	12/12/2007 09:00 AM
KD1GW	8	YS21-FB01-121007	12/10/2007 12:45 PM	12/12/2007 09:00 AM
KD5EW	9	YS12-FB01-121107	12/11/2007 12:15 PM	12/13/2007 01:10 PM
KD5E0	10	YS12-GW23-1207	12/11/2007 01:15 PM	12/13/2007 01:10 PM
KD5E5	11	YS12-EB01-121107	12/11/2007 02:30 PM	12/13/2007 01:10 PM
KD5FG	12	YBKG-SW04-1207	12/11/2007 10:30 AM	12/13/2007 01:10 PM
KD5FN	13	YKBG-SW05-1207	12/11/2007 11:20 AM	12/13/2007 01:10 PM
KD5FP	14	YS08-SW01-1207	12/11/2007 01:45 PM	12/13/2007 01:10 PM
KD5FQ	15	YS08-EB01-121107	12/11/2007 03:15 PM	12/13/2007 01:10 PM

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight

Intercompany Chain of Custody

SDG/Job Reference	YORK15
PO Reference	123348
Project ID	SUBR7
Project Name	Yorktown NWS
Due Date	01/07/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine	
YS22-SW03-1207	734793	WATER	12/10/2007	1000	X		
YSA14-SW01-1207	734795	WATER	12/10/2007	1145	X		
YSA14-EB01-121007	734797	WATER	12/10/2007	1230	X	X	—limited volume
YBKG-SW01-1207	734799	WATER	12/10/2007	1500	X		
YBKG-SW01P-1207	734801	WATER	12/10/2007	1505	X		
YS21-GW05-1207	734803	WATER	12/10/2007	1200	X	X	
YS21-EB01-121007	734805	WATER	12/10/2007	1230	X	X	
YS21-FB01-121007	734807	WATER	12/10/2007	1245	X	X	—limited volume

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	12/11/7	1515	[signature]	12/12/07	1130

Intercompany Chain of Custody

SDG/Job Reference YORK15
PO Reference 123369
Project ID SUBR7
Project Name Yorktown NWS
Due Date 1/8/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
YS12-FB01-121107	734935	WATER	12/11/2007	1215	X	X
YS12-GW23-1207	734937	WATER	12/11/2007	1315	X	X
YS12-EB01-121107	734939	WATER	12/11/2007	1430	X	X
YBKG-SW04-1207	734941	WATER	12/11/2007	1030	X	
YBKG-SW05-1207	734943	WATER	12/11/2007	1120	X	
YS08-SW01-1207	734945	WATER	12/11/2007	1345	X	
YS08-SW01-1207MS	734945MS	WATER	12/11/2007	1345	X	
YS08-SW01-1207MSD	734945MD	WATER	12/11/2007	1345	X	
YS08-EB01-121107	734947	WATER	12/11/2007	1515	X	X

Reused to correct prefix of "YS08"

- labeled YBG-SW04/SW05 - 1207 - CV 12/13/07
- labeled @ 1020 - CV 12/13/07

Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Intercompany Chain of Custody

SDG/Job Reference YORK15
PO Reference 123369
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/08/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine	
YS12-FB01-121107	734935	WATER	12/11/2007	1215	X	X	
YS12-GW23-1207	734937	WATER	12/11/2007	1315	X	X	
YS12-EB01-121107	734939	WATER	12/11/2007	1430	X	X	
YBKG-SW04-1207	734941	WATER	12/11/2007	1030	X		
YBKG-SW05-1207	734943	WATER	12/11/2007	1120	X		
YBKG-SW01-1207	734945	WATER	12/11/2007	1345	X		
YBKG-SW01-1207MS	734945MS	WATER	12/11/2007	1345	X		
YBKG-SW01-1207MSD	734945MD	WATER	12/11/2007	1345	X		
YS08-EB01-121107	734947	WATER	12/11/2007	1515	X	X	-limited volume

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/12/7	1520	[signature]	12/13/07	1430

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

MULTI COOLER RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT: TAL - Burlington LOT# (QUANTIMS ID): G7L120267

	INITIALS	DATE
TEMPERTURE RECORD (IN °C) IR 4 ☐ 5 ☑ ☐ OTHER _____	aw	12/13/07

COOLER ID 1
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) _____
COC #(S) _____
TEMPERATURE BLANK: OBSERVED: _____ CORRECTED: _____
SAMPLE TEMPERATURE:
OBSERVED: 3 2 7 AVERAGE: 3 CORRECTED: 3
SAMPLES / TESTS (IF NCM REQUIRED): _____

COOLER ID 2
CUSTODY SEAL STATUS ☐ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) _____
COC #(S) _____
TEMPERATURE BLANK: OBSERVED: _____ CORRECTED: _____
SAMPLE TEMPERATURE:
OBSERVED: 3 1 1 AVERAGE: 2 CORRECTED: 2
SAMPLES / TESTS (IF NCM REQUIRED): _____

COOLER ID 3
CUSTODY SEAL STATUS ☐ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) _____
COC #(S) _____
TEMPERATURE BLANK: OBSERVED: _____ CORRECTED: _____
SAMPLE TEMPERATURE:
OBSERVED: 2 3 5 AVERAGE: 3 CORRECTED: 3
SAMPLES / TESTS (IF NCM REQUIRED): _____

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

QA-185 1/06 DAW, Page 2

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST
TestAmerica West Sacramento

49440

CLIENT TAL- Burlington PM DA LOG # 49411

LOT# (QUANTIMS ID) G7L120267 QUOTE# ~~74459~~ 77439 QU 12/12/07 LOCATION W21C

DATE RECEIVED 12/13/07 12/12/07 TIME RECEIVED 1310 0900

		Initials	Date
DELIVERED BY	☑ FEDEX ☐ CA OVERNIGHT ☐ CLIENT ☐ AIRBORNE ☐ GOLDENSTATE ☐ DHL ☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS ☐ TAL COURIER ☐ VALLEY LOGISTICS ☐ MORGAN HILL COURIER ☐ OTHER	CV	12/12/07
CUSTODY SEAL STATUS	☑ INTACT ☐ BROKEN ☐ N/A		
CUSTODY SEAL #(S)	Seal		
SHIPPPING CONTAINER(S)	☑ TAL ☐ CLIENT ☐ N/A		
TEMPERTURE RECORD (IN °C)	IR 4 ☐ 5 ☑ ☐ OTHER		
COC #(S)	N/A		
TEMPERATURE BLANK	Observed: C Corrected:		
SAMPLE TEMPERATURE Observed:	See sheet Average: Corrected Average:		
COLLECTOR'S NAME:	☐ Verified from COC ☑ Not on COC		
pH MEASURED	☐ YES ☐ ANOMALY ☑ N/A		
LABELED BY			
LABELS CHECKED BY			
PEER REVIEW	☑ NA		
SHORT HOLD TEST NOTIFICATION	SAMPLE RECEIVING		
	WETCHEM ☑ N/A		
	VOA-ENCORES ☑ N/A		
☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL	☑ N/A		
☑ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES	☐ N/A		
☐ CLOUSEAU	☐ TEMPERATURE EXCEEDED (2 °C – 6 °C)*1 ☑ N/A		

☐ WET ICE ☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED

Notes: Rec'd ~~1800~~ - SW04-1207 labled @ 1020. the coc list @ 1030.

*1 Acceptable temperature range for State of Wisconsin samples is ≤4°C.

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE

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TestAmerica West Sacramento

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Bottle Lot Inventory

Lot ID: G7L120267

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOA*																				
VOAh*																				
AGB	2	2	2	2	2	4	4	2	4	3	4	2	2	7	2					
AGBs																				
250AGB																				
250AGBs																				
250AGBn																				
500AGB																				
____AGJ																				
500AGJ																				
250AGJ																				
125AGJ																				
____CGJ																				
500CGJ																				
250CGJ																				
125CGJ																				
PJ																				
PJn																				
500PJ																				
500PJn																				
500PJna																				
500PJzn/na																				
250PJ																				
250PJn																				
250PJna																				
250PJzn/na																				
Acetate Tube																				
____"CT																				
Encore																				
Folder/filter																				
PUF																				
Petri/Filter																				
XAD Trap																				
Ziploc																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

h = hydrochloric acid **s** = sulfuric acid **na** = sodium hydroxide **n** = nitric acid **zn** = zinc acetate

Number of VOAs with air bubbles present / total number of VOA's

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Page 3

LEAVE NO SPACES BLANK. USE "NA" IF NOT APPLICABLE.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

MULTI COOLER RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT: TAL- Burlington LOT# (QUANTIMS ID): G7L120267

	INITIALS	DATE
TEMPERTURE RECORD (IN °C) IR 4 ☐ 5 ☑ ☐ OTHER	CV	12/12/07
COOLER ID 1		
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A		
CUSTODY SEAL #(S)		
COC #(S)		
TEMPERATURE BLANK: OBSERVED: CORRECTED:		
SAMPLE TEMPERATURE:		
OBSERVED: 2 3 3 AVERAGE: 3 CORRECTED: 3		
SAMPLES / TESTS (IF NCM REQUIRED):		
COOLER ID 2		
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A		
CUSTODY SEAL #(S)		
COC #(S)		
TEMPERATURE BLANK: OBSERVED: CORRECTED:		
SAMPLE TEMPERATURE:		
OBSERVED: 1 1 3 AVERAGE: 2 CORRECTED: 2		
SAMPLES / TESTS (IF NCM REQUIRED):		
COOLER ID 3		
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A		
CUSTODY SEAL #(S)		
COC #(S)		
TEMPERATURE BLANK: OBSERVED: CORRECTED:		
SAMPLE TEMPERATURE:		
OBSERVED: 2 1 4 AVERAGE: 2 CORRECTED: 2		
SAMPLES / TESTS (IF NCM REQUIRED):		

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

QA-185 1/06 DAW, Page 2

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 12/10-11/07
Received Date: 12/11-12/07
Analysis Dates: 12/09-15/07

Cooler Temp: 1.0-2.9°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications required for the initial calibrations. The continuing calibrations exhibited high %Ds which required qualifications to the data, see attached Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method blanks. The QC blanks associated with this SDG were: YS12-TB01-121107 (no positive results), YSA14-TB01-121007 (no positive results) and YBKG-TB01-121107 (no positive results) - trip blanks; YSA12-EB01-121107 (chloroform 2.2J ug/L—no qualifications required) and YS08-EB01-121107 (chloroform 2.8 ug/L—no qualifications) - equipment blanks; YS21-FB01-121007 (no positive results) - field blank.

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for YS08-SW01-1207—all criteria were met.

Field Duplicate Sample

A field duplicate was submitted for YBKG-SW01P-1207—no positive results exhibited, no qualifications required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Lynn Masumoto **Date:** 2/18/08

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK15

Lab File ID: SB026 BFB Injection Date: 12/14/07

Instrument ID: MSS5973 BFB Injection Time: 1801

GC Column: RTX-624 ID: 0.18 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	19.4
75	30.0 - 66.0% of mass 95	53.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.6 (0.9)1
174	50.0 - 120.0% of mass 95	71.2
175	4.0 - 9.0% of mass 174	5.6 (7.8)1
176	93.0 - 101.0% of mass 174	68.3 (95.8)1
177	5.0 - 9.0% of mass 176	5.0 (7.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCVIS;4.3-05	CCVIS;4.3-050	SQ0096	12/14/07	1821
02	VLCS02	LCS 680-93671/	SQ0097	12/14/07	1857
03	VBLK02	MB 680-93671/1	SQ0098	12/14/07	1919
04	YBG-SW04-120	680-32635-D-1	S00377	12/14/07	2003
05	YBG-SW05-120	680-32635-D-3	S00378	12/14/07	2025
06	YS08-SW01-12	680-32635-D-5	S00379	12/14/07	2047
07	YS08-SW01-12	680-32635-D-5M	S00380	12/14/07	2109
08	YS08-SW01-12	680-32635-D-5M	S00381	12/14/07	2131
09	YS08-EB01-12	680-32635-C-7	S00382	12/14/07	2153
10	YBG-TB01-121	680-32635-A-8	S00383	12/14/07	2215
11	YS12-TB01-12	680-32635-A-9	S00384	12/14/07	2237
12	YS12-FB01-12	680-32635-C-10	S00385	12/14/07	2259
13	YS12-GW23-12	680-32635-G-11	S00386	12/14/07	2321
14	YS12-EB01-12	680-32635-C-12	S00387	12/14/07	2343
15					
16					
17					
18					
19					
20					
21					
22					

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK15

Instrument ID: MSS5973 Calibration Date: 12/14/07 Time: 1821

Lab File ID: SQ0096 Init. Calib. Date(s): 12/01/07 12/01/07

EPA Sample No.(VSTD050##): CCVIS;4.3-050 Init. Calib. Times: 1856 2024

Heated Purge: (Y/N) N

GC Column: DB-624 ID: 0.18 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	2.348	2.473		5.3	25.0	
Chloromethane	1.609	1.717		6.7		
Vinyl Chloride	1.664	1.668	0.100	0.2	25.0	
Bromomethane	0.558	0.636	0.100	14.0	25.0	
Chloroethane	0.550	0.874		58.9		J/UJ
Trichlorofluoromethane	2.705	3.029		12.0		
1,1-Dichloroethene	1.490	1.536	0.100	3.1	25.0	
Freon 113	3.452	3.607		4.5		
Acetone	1.143	1.240		8.5		
Carbon Disulfide	4.852	5.023		3.5		
Methyl Acetate	1.274	1.168		-8.3		
Methylene Chloride	1.897	1.873		-1.3		
trans-1,2-Dichloroethene	1.663	1.688		1.5		
Methyl Tert-Butyl Ether	5.083	5.051		-0.6		
1,1-Dichloroethane	3.445	3.394	0.200	-1.5	25.0	
cis-1,2-Dichloroethene	1.922	1.935		0.7		
1,2-Dichloroethene (total)	3.585	3.623		1.0		
2-Butanone	1.104	1.086		-1.6		
Chloroform	4.072	4.136	0.200	1.6	25.0	
1,1,1-Trichloroethane	0.571	0.604	0.100	5.8	25.0	
Cyclohexane	0.453	0.468		3.3	25.0	
Carbon Tetrachloride	0.469	0.494	0.100	5.3	25.0	
Benzene	1.209	1.235	0.500	2.2	25.0	
1,2-Dichloroethane	3.665	3.625	0.100	-1.1	25.0	
Trichloroethene	0.298	0.313	0.300	5.0	25.0	<-

All other compounds must meet a minimum RRF of 0.010.

7B
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK15

Instrument ID: MSS5973 Calibration Date: 12/14/07 Time: 1821

Lab File ID: SQ0096 Init. Calib. Date(s): 12/01/07 12/01/07

EPA Sample No.(VSTD050##): CCVIS;4.3-050 Init. Calib. Times: 1856 2024

Heated Purge: (Y/N) N

GC Column: DB-624 ID: 0.18 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Methyl Cyclohexane	0.523	0.545		4.2	
1,2-Dichloropropane	0.311	0.312		0.3	
Bromodichloromethane	0.533	0.574	0.200	7.7	25.0
cis-1,3-Dichloropropene	0.542	0.558	0.200	3.0	25.0
4-Methyl-2-Pentanone	0.310	0.306		-1.3	
Toluene	1.449	1.484	0.400	2.4	25.0
trans-1,3-Dichloropropene	0.526	0.557	0.100	5.9	25.0
1,1,2-Trichloroethane	0.286	0.295	0.100	3.1	25.0
Tetrachloroethene	0.280	0.293	0.200	4.6	25.0
2-Hexanone	0.263	0.271		3.0	
Dibromochloromethane	0.343	0.371	0.100	8.2	25.0
1,2-Dibromoethane	0.338	0.346		2.4	
Chlorobenzene	0.958	1.001	0.500	4.5	25.0
Ethylbenzene	0.490	0.516	0.100	5.3	25.0
Xylene (total)	0.603	0.632	0.300	4.8	25.0
Styrene	0.971	1.012	0.300	4.2	25.0
Bromoform	0.233	0.262	0.100	12.4	25.0
Isopropylbenzene	1.649	1.779		7.9	
1,1,2,2-Tetrachloroethane	0.388	0.385	0.300	-0.8	25.0
1,3-Dichlorobenzene	0.763	0.812	0.600	6.4	25.0
1,4-Dichlorobenzene	0.769	0.811	0.500	5.5	25.0
1,2-Dichlorobenzene	0.700	0.729	0.400	4.1	25.0
1,2-Dibromo-3-Chloropropane	0.081	0.083		2.5	
1,2,4-Trichlorobenzene	0.398	0.438	0.200	10.0	25.0
1,2-Dichloroethane-d4	3.092	3.190		3.2	
Toluene-d8	1.222	1.240		1.5	
4-Bromofluorobenzene	0.582	0.627	0.200	7.7	25.0

All other compounds must meet a minimum RRF of 0.010.

Initial Calibration Date: 12/1/2007

RRF and %RSD Calculations:

Compound Name: vinyl chloride
Lab Value: 1.712

Area of Compound	385108
Area of Internal STD	56243
Conc. of Internal STD	50
Conc. of Compound	200
Calculated RRF	1.712

Compound Name: chloromethane
Lab Value: 5.1

RRF of STD 1	1.571
RRF of STD 2	1.549
RRF of STD 3	1.549
RRF of STD 4	1.636
RRF of STD 5	1.740
Calculated % RSD	5.1

Continuing Calibration File ID: 12/12/2007

RRF and %D Calculations:

Compound Name: methylene chloride
Lab Value: 2.007

Area of Compound	112849
Area of Internal STD	56233
Conc. of Internal STD	50
Conc. of Compound	50
Calculated RRF	2.007

Compound Name: 2-butanone
Lab Value: 13.5

Average RRF	1.104
Calibration Check RRF	1.253
Calculated % D	-13.5

SAMPLE CALCULATION

Sample ID: YS08-EB01-121107
Standard ID: 12/14/2007
Compound: chloroform
Concnetration: 2.8 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	12677		
Area of Internal STD	53801		
Conc. of Internal (ng)	250	250	
RRF of Compound	4.136		
Dilution Factor	1	1	
Weight of Sample	NA	5	
Volume of Sample	5	NA	
% Moisture	NA		
Aliquot of methol	NA	NA	
Concentration	2.85	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	3.462	3.517	1.016
Standard	3.462	3.517	1.016

CASE NARRATIVE
Volatiles Fraction (OLM04.3)
SDG: YORK15
STL Lab Reference No.: 680-32610-1, 680-32635
Project: Yorktown Sites, CTO 195

I. RECEIPT
No receipt or storage anomalies were noted.

II. HOLDING TIMES
A. Sample Preparation: All holding times were met.
B. Sample Analysis: All holding times were met.

III. METHODS
Preparation: OLM04.3_Vol
Cleanup: None
Analysis: OLM04.3_Vol

IV. PREPARATION
Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All initial and continuing calibration criteria were met for target compounds.

The response factor (RRF) was low for trichloroethene in the initial calibration analyzed in clock 1S120107 and in the continuing calibration in clocks 1S121207 and 1S121407.

B. Blanks: No target compounds were detected in the method blanks.

C. Surrogates: All surrogates recovered within quality control (QC) limits.

D. Spikes: Laboratory control standards (LCS) were analyzed for quality assurance purposes and all target compounds recovered within quality control (QC) limits.

Client sample 680-32365-5 "YS08-SW01-1207" was the designated matrix spike (MS) and matrix spike duplicate (MSD) and all target compounds recovered within quality control (QC) limits.

E. Samples: No dilutions were required for sample analysis.

F. Internal Standards: Internal standards for all samples were within quality control (QC) limits.

G. Notes: Laboratory storage blanks were analyzed with these samples. The raw data for the laboratory storage blanks are included in the data package at the end of the Raw Sample Data section.

CLP method OLM04.3 was utilized for this project, however our forms and raw data generated using the target software currently lists CLP 4.2 as the statement of work.

All tentatively identified compounds (TICs) in this sample delivery group are estimated values.

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 12/10-11/07
Received Date: 12/11-12/07
Extraction Date: 12/14/07 and 01/08/08
Analysis Dates: 01/06-08, 11/08

Cooler Temp: 1.0-2.9°C

All holding time requirements were met with the exception of the re-extraction of sample YS08-SW01-1207. Sample YS08-SW01-1207RE exceeded the Region III 7-day water extraction holding time by 20 days. Due to the grossly exceeded holding time the positive results were qualified as estimated (J) and non-detected results were qualified as rejected (R).

Calibrations

Mass assignments were verified by the injection of DFTPP.

No qualifications required for the initial and continuing calibrations.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method blanks. The QC blanks associated with this SDG were: YSA12-EB01-121107 (no positive results) and YS08-EB01-121107 (no positive results)- equipment blanks; YS21-FB01-121007 (no positive results)- field blank.

The associated method and QC blanks exhibited contamination for TICs. All B flagged TICs in the field samples are flagged B and crossed out in accordance with the Region III modifications to the National Functional Guidelines.

Surrogates

All criteria were met with the exception of sample YS08-SW01-1207. Sample YS08-SW01-1207 exhibited low surrogate recovery for 2-fluorobiphenyl at 17% (QC limits 43-116%) and below 10% recoveries for 2-fluorophenol at 6% (QC limits 21-110%), 2-chlorophenol-d4 at 9% (33-110%), 1,2-dichlorobenzene-d4 at 3% (QC limits 16-110%) and nitrobenzene-d5 at 9% (QC limits 35-114); therefore, all positive results were qualified as biased low (L) and non-detected results were rejected (R), qualifier code: SSL. The sample was re-extracted with compliant surrogates results; however the sample grossly exceeded extraction holding time and therefore was not used.

Laboratory Control Sample

An LCS was not submitted for this data package.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for YS08-SW01-1207—all criteria were met.

Field Duplicate Sample

A field duplicate was submitted for YBKG-SW01P-1207—no positive results exhibited, no qualifications required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Muschiotti **Date:** 2/18/08

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Savannah Job No.: 680-32610-1

SDG No.: YORK15

Matrix: Water Level: Low

GC Column (1): Equity 5MS ID: 0.25(mm)

Client Sample ID	Lab Sample ID	2FP #	PHL #	2CP4 #	12DCB #	NBZ #	FBP #	TBP #	TPH #
YS21-GW05-1207	680-32610-1	92	91	92	72	98	89	98	94
YS21-EB01-121007	680-32610-2	63	61	62	50	69	61	67	57
YS21-FB01-121007	680-32610-3	65	63	64	53	70	65	63	85
YS22-SW03-1207	680-32610-4	69	68	68	54	74	67	76	27 *
YSA14-SW01-1207	680-32610-6	69	68	68	52	80	68	80	23 *
YSA14-EB01-121007	680-32610-8	76	73	75	65	86	79	85	90
YBKG-SW01-1207	680-32610-10	86	84	85	65	95	83	95	35
YBKG-SW01P-1207	680-32610-12	76	76	78	60	91	77	94	35
YBKG-SW04-1207	680-32635-1	85	85	84	65	93	81	95	34
YBKG-SW05-1207	680-32635-3	90	90	91	70	97	89	102	61
YS08-SW01-1207	680-32635-5	6 *	12	9 *	3 *	9 *	17 *	79	37
YS08-SW01-1207 RE	680-32635-5 RE	62	54	58	41	61	58	61	26 *
YS08-EB01-121107	680-32635-7	78	77	80	68	90	85	98	98
YS12-FB01-121107	680-32635-10	83	80	83	68	92	80	90	87
YS12-GW23-1207	680-32635-11	71	67	71	56	78	68	75	84
YS12-EB01-121107	680-32635-12	72	72	74	61	79	73	74	95
	MB 680-93568/16-A	77	76	80	65	89	82	88	89
	MB 680-95315/2-A	79	68	72	49	79	68	79	88
YS08-SW01-1207 MS	680-32635-5 MS	85	85	85	70	96	86	98	36
YS08-SW01-1207 MSD	680-32635-5 MSD	90	88	88	71	100	87	96	42

L/R
SMa

	QC LIMITS
2FP = 2-Fluorophenol	21-110
PHL = Phenol-d5	10-110
2CP4 = 2-Chlorophenol-d4	33-110
12DCB = 1,2-Dichlorobenzene-d4	16-110
NBZ = Nitrobenzene-d5	35-114
FBP = 2-Fluorobiphenyl	43-116
TBP = 2,4,6-Tribromophenol	10-123
TPH = Terphenyl-d14	33-141

Column to be used to flag recovery values

CASE NARRATIVE
Fraction: SEMI VOLATILES By GC/MS (OLM04.3)
SDG: YORK15
STL Lab Reference No.: 680-32610-1 and 680-32635-1
Project: Yorktown Sites, CTO 195

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. HOLDING TIMES

A. Sample Preparation: Due to low surrogate recoveries, sample 680-32635-5 was re-extracted outside of the established holding time.

B. Sample Analysis: All holding times were met.

III. METHODS

Preparation: CLP-OLM04.3
Cleanup: N/A
Analysis: CLP-OLM04.3

IV. PREPARATION

Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All acceptance criteria were met.
The continuing calibration for clock 1t011108 had one analyte, pentachlorophenol, recover between 25% and 40%, which is acceptable according to the CLP-OLM04.3 method.

B. Blanks: All acceptance criteria were met.

C. Surrogates: The laboratory's SOP allows one acid surrogate and/or one base surrogate to be outside acceptance limits. Surrogate terphenyl-d14 recovered outside of quality control limits in samples 680-32610-4,-6 and 680-32635-5RE and the results have been qualified on the Form 2. Sample 680-32635-5 had several surrogates recover outside of control limits. The sample was reextracted outside of holding time and the primary and the secondary results were reported.

D. Samples: All acceptance criteria were met.

E. Internal Standards: All acceptance criteria were met.

F. Spike: The matrix spike / matrix spike duplicate was performed on sample 680-32635-5, and all acceptance criteria were met.

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8015B with Region III modifications)

Holding Times

Sampling Date: 12/10-11/07
Received Date: 12/11-12/07
Analysis Dates: 12/14/07

Cooler Temp: 1.0-2.9°C

All holding time requirements were met. Samples were analyzed within 14-day volatile holding time.

Calibrations

Initial calibrations were performed according to the method with at least a five-point curve for GRO and the surrogate compound. Calibration factors were calculated. %RSDs were within QC. Continuing calibration standards were analyzed per the CLP method. Column resolution was acceptable. Retention times were stable throughout the analytical sequence. Raw data was verified.

Blanks

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample, and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is less than five times (5X) the blank value. (Region III)

No contamination was reported in the associated method or field blanks. The QC blanks associated with this SDG were: YS21-EB01-121007 (no positive results)-equipment blank; YS21-FB01-121007 (no positive results)- field blank.

Surrogate Recoveries

All BFB recoveries were within the QC limits of 78%-122%. No qualifications were required due to surrogate recoveries.

Internal Standards

All criteria were meet.

Matrix Spike/ Matrix Spike Duplicate

An MS/MSD was not submitted for this data package.

Laboratory Control Samples

The submitted check samples exhibited acceptable recoveries and RPDs for all spike compounds. No qualifications were required.

Field Duplicates

A filed duplicate was not submitted for this data package.

Sample Result Verification

Reported sample results were verified.

Reviewer Laura Muschnoff **Date:** 2/19/08

Initial Calibration Date: 12/5/2007
RF and %RSD Calculations:

Compound Name: GRO
Lab Value: 0.4120

Area of Compound	731572786
Conc of Compd	1000
Area of Internal Standard	53271826
Conc. of Internal Standard	30
Calculated RRF	0.4120

Compound Name: GRO
Lab Value: 6.9

RRF of STD 1	0.4789
RRF of STD 2	0.4436
RRF of STD 3	0.4079
RRF of STD 4	0.4653
RRF of STD 5	0.4147
RRF of STD 6	0.4120
Calculated % RSD	6.9165

Continuing Calibration File ID: 12/14/2007
RF and %D Calculations:

Compound Name: GRO
Lab Value RF: 0.40466
Lab Value %D: 7.4

Area of compound	117437584
Conc. of Compound	200
Area of Internal Standard	43531857
Conc. of Internal Standard	30
Calculated CF	0.4047

Average RRF	0.43705
Calibration Check RRF	0.40466
Calculated % D	7.4

CASE NARRATIVE
Volatiles Gasoline Range Organics Fraction (8015B_GRO)
SDG: YORK15
STL Lab Reference No.: 680-32610-1
Project: Yorktown Sites, CTO 195

I. RECEIPT
No receipt or storage anomalies were noted.

II. HOLDING TIMES
A. Sample Preparation: None
B. Sample Analysis: All holding times were met.

III. METHODS
Preparation: SW-846 5030B
Cleanup: None
Analysis: SW-846 8015B_GRO

IV. PREPARATION
Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All initial and continuing calibration criteria were met.

B. Blanks: No target compounds were detected in the method blank.

C. Surrogates: All surrogates recovered within quality control (QC) limits.

D. Spikes: Laboratory control standards (LCS) were analyzed with the samples in this package and all target compounds were within quality control (QC) limits.

E. Samples: No dilutions were required for sample analysis.

F. Internal standards: The internal standard for all samples were within quality control (QC) limits.

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8015B with Region III modifications)

Holding Times

Sampling Date: 12/10-11/07
Received Date: 12/11-12/07
Extraction Date: 12/13/07
Analysis Dates: 12/14/07

Cooler Temp: 1.0-2.9°C

All holding time requirements were met. Samples were analyzed within 14-day volatile holding time.

Calibrations

Initial calibrations were performed according to the method with at least a five-point curve for DRO and the surrogate compound. Calibration factors were calculated. %RSDs were within QC. Continuing calibration standards were analyzed per the CLP method. Column resolution was acceptable. Retention times were stable throughout the analytical sequence. Raw data was verified.

Blanks

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample, and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is less than five times (5X) the blank value. (Region III)

No contamination was reported in the associated method blanks. The QC blanks associated with this SDG were: YS21-EB01-121007-equipment blank; YS21-FB01-121007 (no positive results)- field blank.

Blank ID	Compound	Concentration	Reporting Limit
YS21-EB01-121007	DRO	0.08J mg/L	0.4 mg/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
YS21-GW05-1207	DRO	B	BL

Surrogate Recoveries

All BFB recoveries were within the QC limits of 78%-122%. No qualifications were required due to surrogate recoveries.

Matrix Spike/ Matrix Spike Duplicate

An MS/MSD was not submitted for this data package.

Laboratory Control Samples

The submitted check samples exhibited acceptable recoveries and RPDs for all spike compounds. No qualifications were required.

Field Duplicates

A filed duplicate was not submitted for this data package.

Sample Result Verification

Reported sample results were verified.

Reviewer Laura Muscarello **Date:** 2/19/08

Initial Calibration Date: 8/31/2007
RF and %RSD Calculations:

Compound Name: DRO
Lab Value: 655345822

Area of Compound	3276729109
Conc of Compd	5
Calculated RRF	655345822

Compound Name: DRO
Lab Value: 5.0

RRF of STD 1	694945170
RRF of STD 2	667799988
RRF of STD 3	658843523
RRF of STD 4	709087056
RRF of STD 5	629093789
RRF of STD 6	655345822
RRF of STD 7	617289831
Calculated % RSD	4.96

Continuing Calibration File ID: 12/14/2007
RF and %D Calculations:

Compound Name: DRO
Lab Value CF: 704134053
Lab Value %D: 6.4

Area of compound	704134053
Concentration	1
Calculated CF	704134053

Average CF	661772168
Calibration Check CF	704134053
Calculated % D	-6.4

Sample Calculation

Sample ID: YS21-GW05-1207A
Standard ID: ICAL 08/31/07

Concentration: 0.04 mg/L

Area of Compound	28093494
Avg. CF of Compound	661772168
Injection volume (uL)	1000
Sample volume (mL)	1000
Dilution Factor	1
Conc.	0.04

CASE NARATIVE
Diesel Range Organics Fraction (8015_DRO)
SDG: YORK15
STL Lab Reference No. 680-32610-1
Project: Yorktown Sites, CTO 195

I. RECEIPT
No anomalies noted.

II. HOLDING TIMES
A. Sample Preparation: All holding times were met.
B. Sample Analysis: All holding times were met.

III. METHODS
Preparation: SW-846 3520C
Cleanup: None
Analysis: SW-846 8015B

IV. PREPARATION
Sample preparation proceeded normally. Samples were extracted in prep batches 680-93445.

V. ANALYSIS

A. Calibration: All initial calibration (ICAL) and continuing calibration acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Surrogates: All acceptance criteria were met.

D. Spikes: A laboratory control standard (LCS) was extracted and analyzed along with the samples in each prep batch in this package. All acceptance criteria were met.

E. Samples: No dilutions were required for the samples in this package.

Holding Times
Sampling Date: 12/10, 12/11
Received Date: 12/11, 12/12 at Burlington, received 12/12, 12/13 at Pittsburgh
Extraction Date: 12/14
Analysis Dates: 12/22

All extraction and analysis holding times were met.

Calibrations
Initial calibrations were performed according to the CLP method with a three-point curve for all single component pesticides and a single point for toxaphene. Single point injections were analyzed for the aroclors. Calibration factors were calculated. %RSDs were within QC limits. Continuing calibration standards were analyzed per the CLP method. All PEM breakdowns and %D criteria were met. All INDA/INDB %D criteria were within QC limits. Column resolution criteria were met. Retention time windows were provided. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Raw data was verified.

Initial Calibration Date: 12/21/07, GC12
CF and %RSD Calculations: **Sequence 12/21/07-12/22/07 on GC12, RTX-1701 & RTX-50**

Compound Name: endrin ketone, mid-level, RTX-50
Lab Value: 6277500

Area of Compound	251100
Conc. of Compound	0.04
Calculated CF	6277500

Compound Name: endrin ketone
Lab Value: 4.3

CF of STD 1	5837300
CF of STD 2	6277500
CF of STD 3	6311612
% RSD	4.31

Continuing Calibration File ID: **Sequence 12/21/07-12/22/07 on GC12, RTX-1701 & RTX-50**
CONC. and %D Calculations:
Compound Name: 4,4'-DDD in INDAMXE, 12/23/07, 0154 on GC12, RTX1701
Lab Value: 0.04112

area of compound	1016942
mid-level CF	24729550
calculated conc.	0.04112

Compound Name: 4,4'-DDD in INDAMXE, 12/23/07, 0154 on GC12, RTX1701
Lab Value: 2.8

nominal amount	0.0400
calculated amount	0.04112
% D	2.8

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample, and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is less than five times (5X) the blank value. (Region III)

No contamination was reported in the associated method blank or instrument blanks. The associated field QC blanks did exhibit target compound contamination.

Blank ID	Compound	Concentration	Action Level	Q Flag

SURROGATE RECOVERIES

All surrogate recoveries were acceptable. Samples did not require qualification due to non-compliant surrogate recoveries.

MATRIX SPIKE/MATRIX SPIKE DUPLICATES

The MS/MSD pair in this SDG exhibited a low recovery for lindane in the MSD and high RPDs for both lindane and 4,4,'-DDT. No qualifications were required.

LABORATORY CONTROL SAMPLES

There was no LCS sample submitted for this SDG.

FIELD DUPLICATE SAMPLE SUMMARY

Compound	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!

Sample ID: **YBKG-SW01-1207** **Duplicate ID:** **YBKG-SW01P-1207**
Comments: No positive results

SAMPLE CALCULATION

EPA SAMPLE ID: YS084-SW015-1207
STANDARD ID: ICAL 12/21/07, mid-level CF, RTX-1701
COMPOUND: heptachlor
CONCENTRATION: 0.403 ug/L

	Water (ug/L)	Soil (ug/Kg)
Area of Compound	321223	
CF of Compound	7973000	
Final Volume (ul)	10000	
Dilution Factor	1	
GPC Factor	na	
Injection Volume	1	
Weight of Sample	na	
Initial Volume of Sample (ml)	1000	NA
Dryness Factor	na	
Concentration	0.40289	

SAMPLE RESULT VERIFICATION

Reported sample results and raw data were verified. No positive results were reported in this SDG.

Reviewer: Angeline Cleveland **Date:** 2/26/08

OCLP OLM04.3 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: TestAmerica Burlington

Lab Code: TALPIT SDG No: YORK15

Matrix Spike ID: YS08-SW01-1207

Lot #: C7L130350 WO #: KD4XA1AC
BATCH: 7348533

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENT. (ug/L)	MS CONCENT. (ug/L)	MS % REC	LIMITS REC	QUAL
Aldrin	0.500	ND	0.362	72	40- 120	
Dieldrin	1.00	ND	0.851	85	52- 126	
Endrin	1.00	ND	0.922	92	56- 121	
gamma-BHC (Lindane)	0.500	ND	0.319	64	56- 123	
4,4'-DDT	1.00	ND	0.822	82	38- 127	
Heptachlor	0.500	ND	0.403	81	40- 131	

NOTES(S):

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 6 outside limits

COMMENTS:

FORM III

OCLP OLM04.3 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: TestAmerica Burlington

Lab Code: TALPIT SDG No: YORK15

Matrix Spike ID: YS08-SW01-1207

Lot #: C7L130350 WO #: KD4XA1AD
BATCH: 7348533

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENT. (ug/L)	MSD % REC	% RPD		QC LIMITS RPD	QC LIMITS REC	QUAL
Aldrin	0.500	0.380	76	4.8		22	40- 120	
Dieldrin	1.00	0.852	85	0.050		18	52- 126	
Endrin	1.00	0.913	91	0.99		21	56- 121	
gamma-BHC (Lindane)	0.500	0.220	44*	37	*	15	56- 123	a p
4,4'-DDT	1.00	0.439	44	61	*	27	38- 127	p
Heptachlor	0.500	0.420	84	4.0		20	40- 131	

No Quals
JLC 22308

NOTES(S):

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 2 out of 6 outside limits
Spike Recovery: 1 out of 6 outside limits

COMMENTS:

FORM III

Holding Times

Sampling Date: 12/10, 12/11
Received Date: 12/11, 12/12
12/12, 12/13 at subcontractor (West Sacramento)
Extraction Dates: 12/17, 8330/8332; 12/26, Mod. 8330 (direct aspiration method)
Analysis Dates: 12/28-29/07, 8330/8332; 12/29, Mod. 8330 (direct aspiration method)

Sample receipt documentation was in order. All extraction and analysis holding time requirements were met.

Calibrations

The samples in this SDG were analyzed according to SW-846 methods 8330/8332/Modified 8330. Initial calibrations were performed with a standard six to eight-point curve for all target compounds. Curve calibration factors were calculated or linear regression curves were plotted. %RSDs or correlation coefficients were within QC limits. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met. Raw data was verified. No qualifications were required due to unmet initial or continuing calibration criteria.

Initial Calibration Date: 10/8/07, Instrument LC11.I C-18 column
CF and %RSD Calculations:

Compound Name: RDX in lev 1 4
Lab Value: 89.24

Area of Compound	4462
Conc. of Compound	50
Calculated CF	89.24

Compound Name: RDX
Lab Value: 1.550

CF of STD 1	86.8
CF of STD 2	87.4
CF of STD 3	87.5
CF of STD 4	89.24
CF of STD 5	89.82
CF of STD 6	89.055
CF of STD 7	90.66
CF of STD 8	89.718
% RSD	1.5496

Initial Calibration Date: 1/2/08, Instrument LC9 CN column

CF and %RSD Calculations:

Compound Name: nitroglycerin in level 6
Lab Value: 67.34500

Area of Compound	13469
Conc. of Compound	200
Calculated CF	67.345

Compound Name: nitroglycerin
Lab Value: 3.20

CF of STD 1	
CF of STD 2	64.4
CF of STD 3	62.25
CF of STD 4	67.0
CF of STD 5	
CF of STD 6	67.345
CF of STD 7	67.332
CF of STD 8	67.042
% RSD	2.1995

Continuing Calibration File ID:
CONC. and %D Calculations:

Compound Name: 2,4,6-TNT, 12/28/07, 7:28 std6 on LC11
Lab Value: 190.9

Area of Compound	17196
avg. CF	90.06612
calculated amount	190.93

Lab Value: 5

nominal amount	200
calculated amount	190.9
% D	4.55

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

No contamination was reported in the associated laboratory blanks. The associated field QC blanks did not exhibit target compound contamination that resulted qualification of the data.

SURROGATE RECOVERIES

Surrogate recoveries were acceptable for all samples and spikes.

EPA SAMPLE ID: YS08-SW01-1207MS (LAB ID - KD5FP1AA)
STANDARD ID: ICAL 10/8/07 LC11
COMPOUND: HMX
CONCENTRATION: 1.21 ug/L

	Water (ug/L)	Soil (mg/Kg)
Area of Compound	7941	
CF of Compound	134	
Final Volume (ml)	20	
Dilution Factor	1	
GPC Factor	1	
Injection Volume	1	
Weight of Sample	na	
Initial Volume of Sample	979	NA
Split factor (split volume)	1	
% Solids Factor	na	
	1.211	

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS08-SW01-1207 exhibited non-compliant recoveries for three explosives compounds. HMX was recovered above the QC limits and 1,3,5-TNB was below the QC limits. The only non-compliant compound that resulted in qualification was for tetryl, which was not recovered in either the MS or MSD. The non-compliant result reported in the native sample was rejected. The LCS samples provided with this SDG also exhibited acceptable recoveries for all compounds. No qualifications were required.

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: **YBKG-SW01-1207** **Duplicate ID:** **YBKG-SW01P-1207**

Comments: No positive results were reported in the field duplicate pair.

SAMPLE RESULT VERIFICATION

No positive results above the reporting limits were reported in the field samples analyzed in this SDG. No qualifications of the data were required beyond those mentioned in the MS/MSD section.

Reviewer Angeline Cleveland **Date:** 22608

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Y508-SW001-1207

Client Lot #...: G7L120267 **Work Order #...:** KD5FP1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: G7L120267-014 KD5FP1AD-MSD
Date Sampled...: 12/11/07 **Date Received..:** 12/13/07
Prep Date.....: 12/17/07 **Analysis Date..:** 12/29/07
Prep Batch #...: 7351258
Dilution Factor: 1.02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2-Amino-4,6-dinitrotoluene	102	(50 - 155)			SW846 8330
	99	(50 - 155)	3.4	(0-30)	SW846 8330
4-Amino-2,6-dinitrotoluene	97	(55 - 155)			SW846 8330
	94	(55 - 155)	3.1	(0-30)	SW846 8330
1,3-Dinitrobenzene	99	(45 - 160)			SW846 8330
	96	(45 - 160)	3.2	(0-30)	SW846 8330
2,4-Dinitrotoluene	97	(60 - 135)			SW846 8330
	96	(60 - 135)	2.0	(0-30)	SW846 8330
2,6-Dinitrotoluene	103	(60 - 135)			SW846 8330
	100	(60 - 135)	2.5	(0-30)	SW846 8330
HMX	118 a	(80 - 115)			SW846 8330
	119 a	(80 - 115)	0.0	(0-30)	SW846 8330
Nitrobenzene	101	(50 - 140)			SW846 8330
	101	(50 - 140)	0.68	(0-30)	SW846 8330
2-Nitrotoluene	94	(45 - 135)			SW846 8330
	92	(45 - 135)	2.6	(0-30)	SW846 8330
3-Nitrotoluene	95	(50 - 130)			SW846 8330
	92	(50 - 130)	3.6	(0-30)	SW846 8330
4-Nitrotoluene	96	(50 - 130)			SW846 8330
	93	(50 - 130)	2.8	(0-30)	SW846 8330
RDX	106	(50 - 160)			SW846 8330
	108	(50 - 160)	1.2	(0-30)	SW846 8330
Tetryl	0.0 a	(20 - 175)			SW846 8330
	0.0 a	(20 - 175)	0.0	(0-30)	SW846 8330
1,3,5-Trinitrobenzene	47 a	(65 - 140)			SW846 8330
	46 a	(65 - 140)	2.4	(0-30)	SW846 8330
2,4,6-Trinitrotoluene	71	(50 - 145)			SW846 8330
	70	(50 - 145)	2.2	(0-30)	SW846 8330
Nitroglycerin	90	(84 - 118)			SW846 8330
	92	(84 - 118)	1.2	(0-30)	SW846 8330
PETN	96	(75 - 118)			SW846 8330
	97	(75 - 118)	0.87	(0-30)	SW846 8330
3,5-Dinitroaniline	103	(40 - 140)			SW846 8330
	106	(40 - 140)	2.0	(0-40)	SW846 8330

L/R in matrix sample.

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: G7L120267 **Work Order #...:** KD5FP1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: G7L120267-014 KD5FP1AD-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	91	(84 - 125)
	90	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: G7L120267 Work Order #...: KD5FP1AC-MS Matrix.....: WATER
MS Lot-Sample #: G7L120267-014 KD5FP1AD-MSD
Date Sampled...: 12/11/07 Date Received..: 12/13/07
Prep Date.....: 12/17/07 Analysis Date..: 12/29/07
Prep Batch #...: 7351258
Dilution Factor: 1.02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2-Amino-4,6-dinitrotoluene	ND	1.02	1.04	ug/L	102		SW846 8330
	ND	1.02	1.00	ug/L	99	3.4	SW846 8330
4-Amino-2,6-dinitrotoluene	ND	1.02	0.986	ug/L	97		SW846 8330
	ND	1.02	0.955	ug/L	94	3.1	SW846 8330
1,3-Dinitrobenzene	ND	1.02	1.01	ug/L	99		SW846 8330
	ND	1.02	0.981	ug/L	96	3.2	SW846 8330
2,4-Dinitrotoluene	ND	1.02	0.994	ug/L	97		SW846 8330
	ND	1.02	0.974	ug/L	96	2.0	SW846 8330
2,6-Dinitrotoluene	ND	1.02	1.05	ug/L	103		SW846 8330
	ND	1.02	1.02	ug/L	100	2.5	SW846 8330
HMX	ND	1.02	1.21	ug/L	118 a		SW846 8330
	ND	1.02	1.21	ug/L	119 a	0.0	SW846 8330
Nitrobenzene	ND	1.02	1.03	ug/L	101		SW846 8330
	ND	1.02	1.02	ug/L	101	0.68	SW846 8330
2-Nitrotoluene	ND	1.02	0.964	ug/L	94		SW846 8330
	ND	1.02	0.939	ug/L	92	2.6	SW846 8330
3-Nitrotoluene	ND	1.02	0.967	ug/L	95		SW846 8330
	ND	1.02	0.932	ug/L	92	3.6	SW846 8330
4-Nitrotoluene	ND	1.02	0.978	ug/L	96		SW846 8330
	ND	1.02	0.951	ug/L	93	2.8	SW846 8330
RDX	ND	1.02	1.08	ug/L	106		SW846 8330
	ND	1.02	1.10	ug/L	108	1.2	SW846 8330
Tetryl	ND	1.02	0.0	ug/L	0.0 a		SW846 8330
	ND	1.02	0.0	ug/L	0.0 a	0.0	SW846 8330
1,3,5-Trinitrobenzene	ND	1.02	0.479	ug/L	47 a		SW846 8330
	ND	1.02	0.467	ug/L	46 a	2.4	SW846 8330
2,4,6-Trinitrotoluene	ND	1.02	0.730	ug/L	71		SW846 8330
	ND	1.02	0.714	ug/L	70	2.2	SW846 8330
Nitroglycerin	ND	5.11	4.62	ug/L	90		SW846 8330
	ND	5.09	4.68	ug/L	92	1.2	SW846 8330
PETN	ND	5.11	4.88	ug/L	96		SW846 8330
	ND	5.09	4.93	ug/L	97	0.87	SW846 8330
3,5-Dinitroaniline	ND	1.02	1.05	ug/L	103		SW846 8330
	ND	1.02	1.08	ug/L	106	2.0	SW846 8330

(Continued on next page)

See next page for flags
[illegible] 12/30/07

245

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: G7L120267 Work Order #...: KD5FP1AC-MS Matrix.....: WATER
MS Lot-Sample #: G7L120267-014 KD5FP1AD-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	91	(84 - 125)
	90	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

This SDG contains total and dissolved metals, mercury and cyanide analysis using ILM05.3. Please note that method criteria were used to assess all calibration standards because Region III does not have a validation document for the ILM05.3 SOW. Region III qualification conventions and qualifiers were used.

HOLDING TIMES

Sampling Date: 12/10, 12/11
Received Date: 12/11 & 12/12 Cooler temps OK, receipt documentation present.
Prep. Dates: 1/2 ICP, 1/3 & 1/4 Hg, 12/18 & 12/19 CN All holding time requirements were met.
Analysis Dates: 1/9-1/16 ICP, 1/4 & 1/7 Hg, 12/18 & 12/20 CN

CALIBRATIONS

An initial calibration single point calibration was analyzed for ICP metals. Initial calibration curve was analyzed for Hg and CN. All initial calibration criteria were met. Calibration verification criteria were met for all ICV and CCV standards. The ICSAB standards exhibited acceptable recoveries for all analytes. The CRI check standards were analyzed and met method criteria with three exceptions. Fe, Na and Al were above the QC limit in one or more of the associated CRI standards. Positive results up to 2X CRDL were qualified as biased high K (in associated samples only). Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the CRDL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the CRQL, result is reported as non-detect at the CRQL.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Concentration	Action Level	Q Flag
YS21-EB01-121007	chromium	0.30J ug/L	1.5 ug/L	B
PBLK – positive cont	manganese	2.059J ug/L	10.295 ug/L	B
	nickel	1.053 ug/L	5.265 ug/L	B
	thallium	1.994J ug/L	9.97 ug/L	B
ICB – positive cont.	cadmium	0.364J ug/L	1.82 ug/L	B
	chromium	0.176 ug/L	0.88 ug/L	B
CCB – positive cont.	arsenic	2.501J ug/L	12.505 ug/L	B
	vanadium	0.587 ug/L	2.935 ug/L	B
PBLK – negative cont. 12/17 & 12/19 batches	mercury	-0.140J ug/L	10X MDL (0.29 ug/L)	L/UL
	lead	-4.088J ug/L	10X MDL (27 ug/L)	L/UL
	zinc	-5.369J ug/L	10X MDL (46 ug/L)	L/UL

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBLK – negative cont.	selenium	-10.420J ug/L	10X MDL (33 ug/L)	L/UL
	mercury	-0.044J ug/L	10X MDL (0.28 ug/L)	L/UL
CCB – negative cont.	thallium	-2.572J ug/L	10X MDL (18 ug/L)	L/UL
	cyanide	-1.099J ug/L	10X MDL (4.3 ug/L)	L/UL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB, if less than the analyte CRDL, is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

See validation report for specific samples and qua.ifications.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MD pair in this SDG exhibited acceptable results. All associated LCS samples exhibited acceptable recoveries for all analytes.

SERIAL DILUTIONS

The serial dilution analysis of sample YS08-SW01-1207 exhibited acceptable %Ds for all analytes with the exception of potassium. All total metals sample results reported for the analyte potassium were qualified as estimated J/UJ in the field samples.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL.

Sample ID: YBKG-SW01-1207 TM Duplicate Sample ID: YBKG-SW01P-1207 TM

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	1480	1220	19%
calcium	117000	116000	1%
iron	1680	1340	23%
magnesium	165000	164000	1%
manganese	136	128	6%
potassium	54900	54600	1%
sodium	1380000	1380000	0%

Comments: No qualifications were required.

Sample ID: YBKG-SW01-1207 DM Duplicate Sample ID: YBKG-SW01P-1207 DM

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	107000	106000	1%
magnesium	134000	131000	2%
manganese	127	126	1%
sodium	1170000	1150000	2%
potassium	45300	44600	2%

Comments: No qualifications were required.

SAMPLE CALCULATION

EPA SAMPLE ID: YS12-GW05-1207
COMPOUND: aluminum
CONCENTRATION: 966 ug/L
%Solids - NA
100 ml to 100 ml
Raw Data result: 966 ug/L

Water sample results are direct read from instrument.

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the IDL and the CRDL were qualified as estimated, J by the laboratory.

Reviewer Jaqueline Cleveland **Date:** 2/26/08

USEPA-CLP FORMS

2B-IN

CRQL CHECK STANDARD

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG No.: YORK15

CRQL Check Standard Source: Inorganic Ventu

Concentration Units: ug/L

Analyte	CRQL Check Standard				
	Initial			Final	
	True	Found*	%R (1)	Found*	%R (1)
Silver	10.0	9.16 J	92	9.47 J	95
Aluminum	200.0	210.50	105	184.20 J	92
Antimony	60.0	61.34	102	62.07	103
Barium	200.0	201.40	101	197.50 J	99
Beryllium	5.0	5.47	109	5.26	105
Calcium	5000.0	5186.00	104	5157.00	103
Cadmium	5.0	5.16	103	5.17	103
Cobalt	50.0	49.59 J	99	49.73 J	99
Chromium	10.0	10.00 J	100	9.79 J	98
Copper	25.0	23.71 J	95	22.88 J	92
Magnesium	5000.0	5537.00	111	5310.00	106
Manganese	15.0	14.67 J	98	14.57 J	97
Sodium	5000.0	5123.00	102	7035.00	141
Nickel	40.0	40.17	100	40.08	100
Lead	10.0	9.18 J	92	7.92 J	79
Potassium	5000.0	5151.00	103	5183.00	104
Selenium	35.0	30.22 J	86	29.12 J	83
Thallium	25.0	24.19 J	97	22.43 J	90
Vanadium	50.0	50.22	100	51.17	102
Zinc	60.0	60.67	101	59.92 J	100

K+ ↑ to 1000

(1) Control Limits: 70-130 with the following exceptions:
ICP-AES - Antimony, Lead, and Thallium: 50-150
ICP-MS - Cobalt, Manganese, and Zinc: 50-150

* if applicable, enter the concentration qualifier "J" or "U" after the concentration in these columns (e.g., 0.20U for Mercury)

USEPA-CLP FORMS

2B-IN

CRQL CHECK STANDARD

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG No.: YORK15

CRQL Check Standard Source: Inorganic Ventu

Concentration Units: ug/L

Analyte	CRQL Check Standard				
	Initial			Final	
	True	Found*	%R (1)	Found*	%R (1)
Silver	10.0	9.62 J	96	9.81 J	98
Aluminum	200.0	170.00 J	85	327.80	164 K+ ↑ to 400 ✓
Antimony	60.0	57.95 J	97	57.15 J	95
Arsenic	10.0	9.74 J	97	9.43 J	94
Barium	200.0	194.70 J	97	189.50 J	95
Beryllium	5.0	5.22	104	5.01	100
Calcium	5000.0	5085.00	102	5238.00	105
Cadmium	5.0	4.71 J	94	5.20	104
Cobalt	50.0	48.50 J	97	48.94 J	98
Chromium	10.0	9.56 J	96	9.67 J	97
Copper	25.0	22.37 J	89	22.90 J	92
Iron	100.0	86.87 J	87	142.20	142 K+ ↑ 200 ✓
Magnesium	5000.0	5086.00	102	5190.00	104
Manganese	15.0	14.18 J	95	14.21 J	95
Sodium	5000.0	4937.00 J	99	6789.00	136 K+ ↑ 10000 ✓
Nickel	40.0	38.06 J	95	38.86 J	97
Lead	10.0	8.10 J	81	10.14	101
Potassium	5000.0	4989.00 J	100	5192.00	104
Selenium	35.0	38.59	110	34.52 J	99
Thallium	25.0	22.11 J	88	20.64 J	83
Vanadium	50.0	48.43 J	97	49.58 J	99
Zinc	60.0	58.99 J	98	59.23 J	99

(1) Control Limits: 70-130 with the following exceptions:
ICP-AES - Antimony, Lead, and Thallium: 50-150
ICP-MS - Cobalt, Manganese, and Zinc: 50-150

* if applicable, enter the concentration qualifier "J" or "U" after the concentration in these columns (e.g., 0.20U for Mercury)

USEPA-CLP FORMS

2B-IN

CRQL CHECK STANDARD

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG No.: YORK15

CRQL Check Standard Source: Inorganic Ventu

Concentration Units: ug/L

Analyte	CRQL Check Standard				
	Initial			Final	
	True	Found*	%R (1)	Found*	%R (1)
Silver	10.0			9.75 J	98
Aluminum	200.0			172.40 J	86
Antimony	60.0			58.06 J	97
Arsenic	10.0			9.07 J	91
Barium	200.0			190.30 J	95
Beryllium	5.0			5.03	101
Calcium	5000.0			5087.00	102
Cadmium	5.0			4.44 J	89
Cobalt	50.0			48.12 J	96
Chromium	10.0			9.33 J	93
Copper	25.0			22.64 J	91
Iron	100.0			84.60 J	85
Magnesium	5000.0			5123.00	102
Manganese	15.0			14.09 J	94
Sodium	5000.0			9660.00	193
Nickel	40.0			38.47 J	96
Lead	10.0			10.47	105
Potassium	5000.0			5393.00	108
Selenium	35.0			36.24	104
Thallium	25.0			19.80 J	79
Vanadium	50.0			48.54 J	97
Zinc	60.0			58.71 J	98

K+ 4 70 1

(1) Control Limits: 70-130 with the following exceptions:
ICP-AES - Antimony, Lead, and Thallium: 50-150
ICP-MS - Cobalt, Manganese, and Zinc: 50-150

* if applicable, enter the concentration qualifier "J" or "U" after the concentration in these columns (e.g., 0.20U for Mercury)

USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	P
Aluminum	200.000	U	41.610	J NQ	41.810	J NQ	200.000	U	200.000	U	P
Antimony	60.000	U	60.000	U	60.000	U	60.000	U	60.000	U	P
Barium	200.000	U	200.000	U	200.000	U	200.000	U	200.000	U	P
Beryllium	5.000	U	5.000	U	5.000	U	5.000	U	5.000	U	P
Calcium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Cadmium	0.364	J	5.000	U	5.000	U	5.000	U	5.000	U	P
Cobalt	50.000	U	50.000	U	50.000	U	50.000	U	50.000	U	P
Chromium	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	P
Copper	25.000	U	25.000	U	25.000	U	25.000	U	25.000	U	P
Magnesium	5000.000	U	96.640	J NQ	124.800	J NQ	91.050	J NQ	120.700	J NQ	P
Manganese	0.374	J NQ	0.058	J NQ	0.603	J NQ	0.052	J NQ	2.059	J	P
Sodium	36.260	J NQ	5000.000	U	5000.000	U	548.200	J NQ	5000.000	U	P
Nickel	40.000	U	40.000	U	2.055	J PB	40.000	U	1.053	J	P
Lead	10.000	U	-1.751	J NQ	10.000	U	-2.042	J NQ	10.000	U	P
Potassium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Selenium	-4.853	J	-3.822	J	-6.950	J	-6.342	J	-10.420	J	P
Thallium	25.000	U	25.000	U	-2.852	J NQ	25.000	U	1.994	J	P
Vanadium	50.000	U	0.841	J	0.625	J NQ	50.000	U	50.000	U	P
Zinc	60.000	U	60.000	U	60.000	U	60.000	U	60.000	U	P

1/9 Run only for 10% CV

none assoc

YS22-SW03 SW3F
YS111-SW01 SW01F

YBKG-SW01 SW01F SW01 SW01F
YS21-GW03 GW03F

flag as noted in report

USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver			10.000	U	0.473	J NQ					P
Aluminum			200.000	U	200.000	U					P
Antimony			60.000	U	60.000	U					P
Barium			200.000	U	200.000	U					P
Beryllium			5.000	U	5.000	U					P
Calcium			5000.000	U	5000.000	U					P
Cadmium			5.000	U	0.300	J					P
Cobalt			50.000	U	50.000	U					P
Chromium			10.000	U	0.178	J					P
Copper			0.656	J NQ	0.700	J					P
Magnesium			98.730	J NQ	110.300	J NQ					P
Manganese			0.054	J NQ	15.000	U					P
Sodium			424.100	J NQ	251.100	J					P
Nickel			0.794	J NQ	40.000	U					P
Lead			10.000	U	10.000	U					P
Potassium			5000.000	U	5000.000	U					P
Selenium			-6.131	J	-5.271	J					P
Thallium			25.000	U	25.000	U					P
Vanadium			50.000	U	50.000	U					P
Zinc			-0.177	J NQ	60.000	U					P

YBGG-SW01
SW01F
SW01F
SW01F
YBZ1-GW05
GW05F

NONE ADDED

USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver	10.000	U	0.649	J NQ	-0.695	J	-0.811	J	10.000	U	P
Aluminum	200.000	U	200.000	U	200.000	U	200.000	U	200.000	U	P
Antimony	60.000	U	60.000	U	60.000	U	60.000	U	60.000	U	P
Arsenic	10.000	U	10.000	U	2.501	J	-1.749	J NQ	10.000	U	P
Barium	200.000	U	200.000	U	200.000	U	200.000	U	200.000	U	P
Beryllium	0.291	J NQ	5.000	U	5.000	U	5.000	U	5.000	U	P
Calcium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Cadmium	5.000	U	5.000	U	5.000	U	5.000	U	5.000	U	P
Cobalt	50.000	U	0.446	J NQ	50.000	U	50.000	U	50.000	U	P
Chromium	0.176	J	10.000	U	-0.309	J NQ	10.000	U	10.000	U	P
Copper	-1.429	J NQ	25.000	U	-1.444	J See ICB	-1.092	J See ICB	25.000	U	P
Iron	-15.310	J	100.000	U	-12.060	J	100.000	U	100.000	U	P
Magnesium	5000.000	U	5000.000	U	153.300	J NQ	5000.000	U	5000.000	U	P
Manganese	0.152	J NQ	15.000	U	-0.126	J NQ	15.000	U	0.194	J NQ	P
Sodium	-49.010	J NQ	-61.340	J NQ	2429.000	J NQ	527.800	J NQ	5000.000	U	P
Nickel	-0.816	J NQ	40.000	U	40.000	U	40.000	U	-1.068	J NQ	P
Lead	10.000	U	10.000	U	10.000	U	2.088	J NQ	10.000	U	P
Potassium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Selenium	35.000	U	35.000	U	35.000	U	35.000	U	35.000	U	P
Thallium	25.000	U	25.000	U	-2.499	J	-2.572	J	25.000	U	P
Vanadium	50.000	U	50.000	U	0.587	J	-0.599	J NQ	50.000	U	P
Zinc	60.000	U	60.000	U	60.000	U	60.000	U	60.000	U	P

1/9-1/10 Run only for IC & RCV

YS12 - GW23 GW23F YBKG-SW04 SW04F

YBKG-SW05 SW05F YS05-SW01 SW01F

USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver			0.498	J							P
Aluminum			45.850	J							P
Antimony			60.000	U							P
Arsenic			2.199	J							P
Barium			200.000	U							P
Beryllium			5.000	U							P
Calcium			5000.000	U							P
Cadmium			5.000	U							P
Cobalt			50.000	U							P
Chromium			10.000	U							P
Copper			25.000	U							P
Iron			100.000	U							P
Magnesium			5000.000	U							P
Manganese			-0.067	J							P
Sodium			917.700	J							P
Nickel			40.000	U							P
Lead			10.000	U							P
Potassium			5000.000	U							P
Selenium			35.000	U							P
Thallium			-2.599	J							P
Vanadium			50.000	U							P
Zinc			60.000	U							P

non acc.

USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Arsenic	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	P
Iron	100.000	U	100.000	U	100.000	U	12.840	J	100.000	U	P
Sodium	45.780	J NO	5000.000	U	227.000	J NX	73.890	J NX			P
Potassium	5000.000	U	5000.000	U	5000.000	U	5000.000	U			P

YBKG SW01P
SW01PF
YS21 GW05
GW05F
Fe -

YS22 - SW03
SW03F
YSA14 - SW01
SW01F
YBKG SW01
SW01P
SW04F
SW05
SW05F
Na & K only

USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Arsenic			10.000	U	10.000	U	10.000	U			P
Iron			100.000	U	8.445	J NA	7.512	J NA			P
Sodium			166.000	J NA	65.420	J NA	74.620	J NA			P
Potassium			5000.000	U	5000.000	U	5000.000	U			P

USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	0.200	U	-0.088	J	-0.060	J	-0.109	J	-0.044	J	CV

2/UL & 10X (0.28)
[illegible] 5/5/08

USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
		C	1	C	2	C	3	C		C	M
Mercury			-0.078	J							CV

USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	0.200	U	0.200	U	-0.033	J	0.200	U	0.200	U	CV

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USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
		C	1	C	2	C	3	C		C	M
Cyanide	-1.099	J	-1.099	J	-0.763	J	-1.099	J	10.000	U	AS

✓ flag as noted in report
JK 22508

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USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Cyanide			-1.099	J							AS

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USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Cyanide	-1.010	J	-1.212	J	-1.330	J	-1.330	J	10.000	U	AS

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USEPA-CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: _____ SDG NO.: YORK15

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Cyanide	-1.110	J	-1.356	J	-1.356	J	-1.016	J	10.000	U	AS

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8-IN

ICP-AES and ICP-MS SERIAL DILUTIONS

EPA SAMPLE NO.

YS08-SW01-1207L

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 NRAS No.: SDG NO.: YORK15

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Silver	10.00	U	50.00	U			P
Aluminum	573.50		1000.00	U	100		P
Antimony	60.00	U	300.00	U			P
Arsenic	10.20		50.00	U	100		P
Barium	36.92	J	1000.00	U	100		P
Beryllium	5.00	U	25.00	U			P
Calcium	224100.00		223000.00		0		P
Cadmium	1.08	J	2.61	J	142		P
Cobalt	50.00	U	250.00	U			P
Chromium	0.38	J	50.00	U	100		P
Copper	25.00	U	125.00	U			P
Iron	369.80		299.60	J	19		P
Magnesium	627400.00		614000.00		2		P
Manganese	45.36		44.57	J	2		P
Sodium	111800.00		114350.00		2		P
Nickel	40.00	U	200.00	U			P
Lead	10.00	U	50.00	U			P
Potassium	19180.00		22380.00	J	17	E	P
Selenium	35.00	U	175.00	U			P
Thallium	6.62	J	125.00	U	100		P
Vanadium	50.00	U	250.00	U			P
Zinc	60.00	U	300.00	U			P

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS22-SD03-1207 | Lab Sample ID: 680-32610-5

Matrix: Solid | Lab File ID: m00687.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5.1 (g) | Date Analyzed: 12/15/2007 00:31

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 77.9

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	44	U	44	2.6
79-34-5	1,1,2,2-Tetrachloroethane	44	U	44	6.2
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	44	U	44	2.9
79-00-5	1,1,2-Trichloroethane	44	U	44	5.3
75-34-3	1,1-Dichloroethane	44	U	44	2.2
75-35-4	1,1-Dichloroethene	44	U	44	2.4
120-82-1	1,2,4-Trichlorobenzene	44	U	44	4.4
96-12-8	1,2-Dibromo-3-Chloropropane	44	U 01/CH	44	12
95-50-1	1,2-Dichlorobenzene	44	U	44	2.9
107-06-2	1,2-Dichloroethane	44	U	44	4.4
78-87-5	1,2-Dichloropropane	44	U	44	4.9
541-73-1	1,3-Dichlorobenzene	44	U	44	3.7
106-46-7	1,4-Dichlorobenzene	44	U	44	2.3
78-93-3	2-Butanone (MEK)	44	U	44	12
591-78-6	2-Hexanone	44	U	44	9.3
108-10-1	4-Methyl-2-pentanone (MIBK)	44	U	44	13
67-64-1	Acetone	44	U	44	20
71-43-2	Benzene	44	U	44	3.5
75-25-2	Bromoform	44	U	44	4.9
74-83-9	Bromomethane	44	U	44	7.1
75-15-0	Carbon disulfide	44	U	44	2.3
56-23-5	Carbon tetrachloride	44	U	44	4.4
108-90-7	Chlorobenzene	44	U	44	3.2
124-48-1	Chlorodibromomethane	44	U	44	2.2
75-00-3	Chloroethane	44	U	44	5.3
67-66-3	Chloroform	44	U	44	2.2
74-87-3	Chloromethane	44	U	44	3.2
156-59-2	cis-1,2-Dichloroethene	44	U	44	2.8
10061-01-5	cis-1,3-Dichloropropene	44	U	44	3.9
110-82-7	Cyclohexane	44	U	44	2.7
75-27-4	Dichlorobromomethane	44	U	44	3.7
75-71-8	Dichlorodifluoromethane	44	U	44	4.0
100-41-4	Ethylbenzene	44	U	44	3.3
106-93-4	Ethylene Dibromide	44	U	44	6.7
98-82-8	Isopropylbenzene	44	U	44	2.2

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-2
SDG No.: YORK16
Client Sample ID: YS22-SD03-1207
Lab Sample ID: 680-32610-5
Matrix: Solid
Lab File ID: m00687.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5.1 (g)
Date Analyzed: 12/15/2007 00:31
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 77.9
Analy. Batch No.: 93670
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	44	U	44	9.8
1634-04-4	Methyl tert-butyl ether	44	U	44	9.8
108-87-2	Methylcyclohexane	44	U	44	3.2
75-09-2	Methylene Chloride	44	U	44	4.4
100-42-5	Styrene	44	U	44	2.9
127-18-4	Tetrachloroethene	44	U	44	3.2
108-88-3	Toluene	44	U	44	3.5
156-60-5	trans-1,2-Dichloroethene	44	U	44	4.3
10061-02-6	trans-1,3-Dichloropropene	44	U	44	3.9
79-01-6	Trichloroethene	44	U	44	4.4
75-69-4	Trichlorofluoromethane	44	U	44	6.7
75-01-4	Vinyl chloride	44	U	44	2.6
1330-20-7	Xylenes, Total	44	U	44	10

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS22-SD03-1207 | Lab Sample ID: 680-32610-5

Matrix: Solid | Lab File ID: m00687.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5.1 (g) | Date Analyzed: 12/15/2007 00:31

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 77.9

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YSA14-SD01-1207 | Lab Sample ID: 680-32610-7

Matrix: Solid | Lab File ID: m00688.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 00:54

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.1

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	30	U	30	1.7
79-34-5	1,1,2,2-Tetrachloroethane	30	U	30	4.1
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	30	U	30	1.9
79-00-5	1,1,2-Trichloroethane	30	U	30	3.5
75-34-3	1,1-Dichloroethane	30	U	30	1.5
75-35-4	1,1-Dichloroethene	30	U	30	1.6
120-82-1	1,2,4-Trichlorobenzene	30	U	30	3.0
96-12-8	1,2-Dibromo-3-Chloropropane	30	U UJ,CCH	30	8.3
95-50-1	1,2-Dichlorobenzene	30	U	30	1.9
107-06-2	1,2-Dichloroethane	30	U	30	3.0
78-87-5	1,2-Dichloropropane	30	U	30	3.2
541-73-1	1,3-Dichlorobenzene	30	U	30	2.4
106-46-7	1,4-Dichlorobenzene	30	U	30	1.5
78-93-3	2-Butanone (MEK)	30	U	30	8.0
591-78-6	2-Hexanone	30	U	30	6.2
108-10-1	4-Methyl-2-pentanone (MIBK)	30	U	30	8.6
67-64-1	Acetone	30	U	30	13
71-43-2	Benzene	30	U	30	2.3
75-25-2	Bromoform	30	U	30	3.2
74-83-9	Bromomethane	30	U	30	4.7
75-15-0	Carbon disulfide	30	U	30	1.5
56-23-5	Carbon tetrachloride	30	U	30	3.0
108-90-7	Chlorobenzene	30	U	30	2.2
124-48-1	Chlorodibromomethane	30	U	30	1.5
75-00-3	Chloroethane	30	U	30	3.5
67-66-3	Chloroform	30	U	30	1.5
74-87-3	Chloromethane	30	U	30	2.1
156-59-2	cis-1,2-Dichloroethene	30	U	30	1.9
10061-01-5	cis-1,3-Dichloropropene	30	U	30	2.6
110-82-7	Cyclohexane	30	U	30	1.8
75-27-4	Dichlorobromomethane	30	U	30	2.4
75-71-8	Dichlorodifluoromethane	30	U	30	2.6
100-41-4	Ethylbenzene	30	U	30	2.2
106-93-4	Ethylene Dibromide	30	U	30	4.4
98-82-8	Isopropylbenzene	30	U	30	1.5

FORM I OLM04.3/Vol

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-2
SDG No.: YORK16
Client Sample ID: YSA14-SD01-1207
Lab Sample ID: 680-32610-7
Matrix: Solid
Lab File ID: m00688.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5.0 (g)
Date Analyzed: 12/15/2007 00:54
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 66.1
Analy. Batch No.: 93670
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	30	U	30	6.5
1634-04-4	Methyl tert-butyl ether	30	U	30	6.5
108-87-2	Methylcyclohexane	30	U	30	2.1
75-09-2	Methylene Chloride	30	U	30	3.0
100-42-5	Styrene	30	U	30	1.9
127-18-4	Tetrachloroethene	30	U	30	2.2
108-88-3	Toluene	30	U	30	2.3
156-60-5	trans-1,2-Dichloroethene	30	U	30	2.9
10061-02-6	trans-1,3-Dichloropropene	30	U	30	2.6
79-01-6	Trichloroethene	30	U	30	3.0
75-69-4	Trichlorofluoromethane	30	U	30	4.4
75-01-4	Vinyl chloride	30	U	30	1.7
1330-20-7	Xylenes, Total	30	U	30	6.8

021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YSA14-SD01-1207 | Lab Sample ID: 680-32610-7

Matrix: Solid | Lab File ID: m00688.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 00:54

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.1

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

02/608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01-1207 | Lab Sample ID: 680-32610-11

Matrix: Solid | Lab File ID: m00689.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 01:16

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 58.3

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	24	U	24	1.4
79-34-5	1,1,2,2-Tetrachloroethane	24	U	24	3.4
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	24	U	24	1.6
79-00-5	1,1,2-Trichloroethane	24	U	24	2.9
75-34-3	1,1-Dichloroethane	24	U	24	1.2
75-35-4	1,1-Dichloroethene	24	U	24	1.3
120-82-1	1,2,4-Trichlorobenzene	24	U	24	2.4
96-12-8	1,2-Dibromo-3-Chloropropane	24	U	24	6.7
95-50-1	1,2-Dichlorobenzene	24	U	24	1.6
107-06-2	1,2-Dichloroethane	24	U	24	2.4
78-87-5	1,2-Dichloropropane	24	U	24	2.6
541-73-1	1,3-Dichlorobenzene	24	U	24	2.0
106-46-7	1,4-Dichlorobenzene	24	U	24	1.2
78-93-3	2-Butanone (MEK)	24	U	24	6.5
591-78-6	2-Hexanone	24	U	24	5.0
108-10-1	4-Methyl-2-pentanone (MIBK)	24	U	24	7.0
67-64-1	Acetone	24	U	24	11
71-43-2	Benzene	24	U	24	1.9
75-25-2	Bromoform	24	U	24	2.6
74-83-9	Bromomethane	24	U	24	3.8
75-15-0	Carbon disulfide	24	U	24	1.2
56-23-5	Carbon tetrachloride	24	U	24	2.4
108-90-7	Chlorobenzene	24	U	24	1.8
124-48-1	Chlorodibromomethane	24	U	24	1.2
75-00-3	Chloroethane	24	U	24	2.9
67-66-3	Chloroform	24	U	24	1.2
74-87-3	Chloromethane	24	U	24	1.7
156-59-2	cis-1,2-Dichloroethene	24	U	24	1.5
10061-01-5	cis-1,3-Dichloropropene	24	U	24	2.1
110-82-7	Cyclohexane	24	U	24	1.4
75-27-4	Dichlorobromomethane	24	U	24	2.0
75-71-8	Dichlorodifluoromethane	24	U	24	2.1
100-41-4	Ethylbenzene	24	U	24	1.8
106-93-4	Ethylene Dibromide	24	U	24	3.6
98-82-8	Isopropylbenzene	24	U	24	1.2

02/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-2
SDG No.: YORK16
Client Sample ID: YBKG-SD01-1207
Lab Sample ID: 680-32610-11
Matrix: Solid
Lab File ID: m00689.d
Analysis Method: OLM04.3/Vol
Date Received: 12/11/2007 09:29
Sample wt/vol: 5.0 (g)
Date Analyzed: 12/15/2007 01:16
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 58.3
Analy. Batch No.: 93670
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	24	U	24	5.3
1634-04-4	Methyl tert-butyl ether	24	U	24	5.3
108-87-2	Methylcyclohexane	24	U	24	1.7
75-09-2	Methylene Chloride	24	U	24	2.4
100-42-5	Styrene	24	U	24	1.6
127-18-4	Tetrachloroethene	24	U	24	1.8
108-88-3	Toluene	24	U	24	1.9
156-60-5	trans-1,2-Dichloroethene	24	U	24	2.3
10061-02-6	trans-1,3-Dichloropropene	24	U	24	2.1
79-01-6	Trichloroethene	24	U	24	2.4
75-69-4	Trichlorofluoromethane	24	U	24	3.6
75-01-4	Vinyl chloride	24	U	24	1.4
1330-20-7	Xylenes, Total	24	U	24	5.5

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01-1207 | Lab Sample ID: 680-32610-11

Matrix: Solid | Lab File ID: m00689.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 01:16

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 58.3

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 1 | TIC Total: 620

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.83	620	

02/16/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01P-1207 | Lab Sample ID: 680-32610-13

Matrix: Solid | Lab File ID: m00690.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5.2 (g) | Date Analyzed: 12/15/2007 01:39

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 54.4

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	21	U	21	1.2
79-34-5	1,1,2,2-Tetrachloroethane	21	U	21	3.0
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	21	U	21	1.4
79-00-5	1,1,2-Trichloroethane	21	U	21	2.5
75-34-3	1,1-Dichloroethane	21	U	21	1.1
75-35-4	1,1-Dichloroethene	21	U	21	1.1
120-82-1	1,2,4-Trichlorobenzene	21	U	21	2.1
96-12-8	1,2-Dibromo-3-Chloropropane	21	U	21	5.9
95-50-1	1,2-Dichlorobenzene	21	U	21	1.4
107-06-2	1,2-Dichloroethane	21	U	21	2.1
78-87-5	1,2-Dichloropropane	21	U	21	2.3
541-73-1	1,3-Dichlorobenzene	21	U	21	1.7
106-46-7	1,4-Dichlorobenzene	21	U	21	1.1
78-93-3	2-Butanone (MEK)	21	U	21	5.7
591-78-6	2-Hexanone	21	U	21	4.4
108-10-1	4-Methyl-2-pentanone (MIBK)	21	U	21	6.1
67-64-1	Acetone	21	U	21	9.3
71-43-2	Benzene	21	U	21	1.7
75-25-2	Bromoform	21	U	21	2.3
74-83-9	Bromomethane	21	U	21	3.4
75-15-0	Carbon disulfide	21	U	21	1.1
56-23-5	Carbon tetrachloride	21	U	21	2.1
108-90-7	Chlorobenzene	21	U	21	1.5
124-48-1	Chlorodibromomethane	21	U	21	1.1
75-00-3	Chloroethane	21	U	21	2.5
67-66-3	Chloroform	21	U	21	1.1
74-87-3	Chloromethane	21	U	21	1.5
156-59-2	cis-1,2-Dichloroethene	21	U	21	1.3
10061-01-5	cis-1,3-Dichloropropene	21	U	21	1.8
110-82-7	Cyclohexane	21	U	21	1.3
75-27-4	Dichlorobromomethane	21	U	21	1.7
75-71-8	Dichlorodifluoromethane	21	U	21	1.9
100-41-4	Ethylbenzene	21	U	21	1.6
106-93-4	Ethylene Dibromide	21	U	21	3.2
98-82-8	Isopropylbenzene	21	U	21	1.1

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01P-1207 | Lab Sample ID: 680-32610-13

Matrix: Solid | Lab File ID: m00690.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5.2 (g) | Date Analyzed: 12/15/2007 01:39

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 54.4

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	21	U	21	4.6
1634-04-4	Methyl tert-butyl ether	21	U	21	4.6
108-87-2	Methylcyclohexane	21	U	21	1.5
75-09-2	Methylene Chloride	21	U	21	2.1
100-42-5	Styrene	21	U	21	1.4
127-18-4	Tetrachloroethene	21	U	21	1.5
108-88-3	Toluene	21	U	21	1.7
156-60-5	trans-1,2-Dichloroethene	21	U	21	2.0
10061-02-6	trans-1,3-Dichloropropene	21	U	21	1.8
79-01-6	Trichloroethene	21	U	21	2.1
75-69-4	Trichlorofluoromethane	21	U	21	3.2
75-01-4	Vinyl chloride	21	U	21	1.2
1330-20-7	Xylenes, Total	21	U	21	4.8

021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01P-1207 | Lab Sample ID: 680-32610-13

Matrix: Solid | Lab File ID: m00690.d

Analysis Method: OLM04.3/Vol | Date Received: 12/11/2007 09:29

Sample wt/vol: 5.2 (g) | Date Analyzed: 12/15/2007 01:39

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 54.4

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD04-1207 | Lab Sample ID: 680-32635-2

Matrix: Solid | Lab File ID: m00691.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 02:01

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.2

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	28	U	28	1.6
79-34-5	1,1,2,2-Tetrachloroethane	28	U	28	3.9
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	28	U	28	1.8
79-00-5	1,1,2-Trichloroethane	28	U	28	3.4
75-34-3	1,1-Dichloroethane	28	U	28	1.4
75-35-4	1,1-Dichloroethene	28	U	28	1.5
120-82-1	1,2,4-Trichlorobenzene	28	U	28	2.8
96-12-8	1,2-Dibromo-3-Chloropropane	28	U UJ,CH	28	7.8
95-50-1	1,2-Dichlorobenzene	28	U	28	1.8
107-06-2	1,2-Dichloroethane	28	U	28	2.8
78-87-5	1,2-Dichloropropane	28	U	28	3.1
541-73-1	1,3-Dichlorobenzene	28	U	28	2.3
106-46-7	1,4-Dichlorobenzene	28	U	28	1.4
78-93-3	2-Butanone (MEK)	28	U	28	7.6
591-78-6	2-Hexanone	28	U	28	5.9
108-10-1	4-Methyl-2-pentanone (MIBK)	28	U	28	8.1
67-64-1	Acetone	28	U	28	12
71-43-2	Benzene	28	U	28	2.2
75-25-2	Bromoform	28	U	28	3.1
74-83-9	Bromomethane	28	U	28	4.5
75-15-0	Carbon disulfide	28	U	28	1.4
56-23-5	Carbon tetrachloride	28	U	28	2.8
108-90-7	Chlorobenzene	28	U	28	2.0
124-48-1	Chlorodibromomethane	28	U	28	1.4
75-00-3	Chloroethane	28	U	28	3.4
67-66-3	Chloroform	28	U	28	1.4
74-87-3	Chloromethane	28	U	28	2.0
156-59-2	cis-1,2-Dichloroethene	28	U	28	1.8
10061-01-5	cis-1,3-Dichloropropene	28	U	28	2.4
110-82-7	Cyclohexane	28	U	28	1.7
75-27-4	Dichlorobromomethane	28	U	28	2.3
75-71-8	Dichlorodifluoromethane	28	U	28	2.5
100-41-4	Ethylbenzene	28	U	28	2.1
106-93-4	Ethylene Dibromide	28	U	28	4.2
98-82-8	Isopropylbenzene	28	U	28	1.4

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD04-1207 | Lab Sample ID: 680-32635-2

Matrix: Solid | Lab File ID: m00691.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 02:01

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.2

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	28	U	28	6.2
1634-04-4	Methyl tert-butyl ether	28	U	28	6.2
108-87-2	Methylcyclohexane	28	U	28	2.0
75-09-2	Methylene Chloride	28	U	28	2.8
100-42-5	Styrene	28	U	28	1.8
127-18-4	Tetrachloroethene	28	U	28	2.0
108-88-3	Toluene	28	U	28	2.2
156-60-5	trans-1,2-Dichloroethene	28	U	28	2.7
10061-02-6	trans-1,3-Dichloropropene	28	U	28	2.4
79-01-6	Trichloroethene	28	U	28	2.8
75-69-4	Trichlorofluoromethane	28	U	28	4.2
75-01-4	Vinyl chloride	28	U	28	1.6
1330-20-7	Xylenes, Total	28	U	28	6.4

WM 02/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD04-1207 | Lab Sample ID: 680-32635-2

Matrix: Solid | Lab File ID: m00691.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 02:01

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.2

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 1 | TIC Total: 310

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.83	310	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD05-1207 | Lab Sample ID: 680-32635-4

Matrix: Solid | Lab File ID: m00692.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.2 (g) | Date Analyzed: 12/15/2007 02:24

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 63.6

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	26	U	26	1.5
79-34-5	1,1,2,2-Tetrachloroethane	26	U	26	3.7
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	26	U	26	1.7
79-00-5	1,1,2-Trichloroethane	26	U	26	3.2
75-34-3	1,1-Dichloroethane	26	U	26	1.3
75-35-4	1,1-Dichloroethene	26	U	26	1.4
120-82-1	1,2,4-Trichlorobenzene	26	U	26	2.6
96-12-8	1,2-Dibromo-3-Chloropropane	26	U	26	7.4
95-50-1	1,2-Dichlorobenzene	26	U	26	1.7
107-06-2	1,2-Dichloroethane	26	U	26	2.6
78-87-5	1,2-Dichloropropane	26	U	26	2.9
541-73-1	1,3-Dichlorobenzene	26	U	26	2.2
106-46-7	1,4-Dichlorobenzene	26	U	26	1.3
78-93-3	2-Butanone (MEK)	26	U	26	7.1
591-78-6	2-Hexanone	26	U	26	5.5
108-10-1	4-Methyl-2-pentanone (MIBK)	26	U	26	7.7
67-64-1	Acetone	26	U	26	12
71-43-2	Benzene	26	U	26	2.1
75-25-2	Bromoform	26	U	26	2.9
74-83-9	Bromomethane	26	U	26	4.2
75-15-0	Carbon disulfide	26	U	26	1.3
56-23-5	Carbon tetrachloride	26	U	26	2.6
108-90-7	Chlorobenzene	26	U	26	1.9
124-48-1	Chlorodibromomethane	26	U	26	1.3
75-00-3	Chloroethane	26	U	26	3.2
67-66-3	Chloroform	26	U	26	1.3
74-87-3	Chloromethane	26	U	26	1.9
156-59-2	cis-1,2-Dichloroethene	26	U	26	1.7
10061-01-5	cis-1,3-Dichloropropene	26	U	26	2.3
110-82-7	Cyclohexane	26	U	26	1.6
75-27-4	Dichlorobromomethane	26	U	26	2.2
75-71-8	Dichlorodifluoromethane	26	U	26	2.4
100-41-4	Ethylbenzene	26	U	26	2.0
106-93-4	Ethylene Dibromide	26	U	26	4.0
98-82-8	Isopropylbenzene	26	U	26	1.3

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD05-1207 | Lab Sample ID: 680-32635-4

Matrix: Solid | Lab File ID: m00692.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.2 (g) | Date Analyzed: 12/15/2007 02:24

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 63.6

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	26	U	26	5.8
1634-04-4	Methyl tert-butyl ether	26	U	26	5.8
108-87-2	Methylcyclohexane	26	U	26	1.9
75-09-2	Methylene Chloride	26	U	26	2.6
100-42-5	Styrene	26	U	26	1.7
127-18-4	Tetrachloroethene	26	U	26	1.9
108-88-3	Toluene	26	U	26	2.1
156-60-5	trans-1,2-Dichloroethene	26	U	26	2.6
10061-02-6	trans-1,3-Dichloropropene	26	U	26	2.3
79-01-6	Trichloroethene	26	U	26	2.6
75-69-4	Trichlorofluoromethane	26	U	26	4.0
75-01-4	Vinyl chloride	26	U	26	1.5
1330-20-7	Xylenes, Total	26	U	26	6.1

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD05-1207 | Lab Sample ID: 680-32635-4

Matrix: Solid | Lab File ID: m00692.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.2 (g) | Date Analyzed: 12/15/2007 02:24

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 63.6

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 1 | TIC Total: 14

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.83	14	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 | Lab Sample ID: 680-32635-6

Matrix: Solid | Lab File ID: m00693.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 02:47

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.3

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	30	U	30	1.7
79-34-5	1,1,2,2-Tetrachloroethane	30	U	30	4.1
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	30	U	30	2.0
79-00-5	1,1,2-Trichloroethane	30	U	30	3.6
75-34-3	1,1-Dichloroethane	30	U	30	1.5
75-35-4	1,1-Dichloroethene	30	U	30	1.6
120-82-1	1,2,4-Trichlorobenzene	30	U	30	3.0
96-12-8	1,2-Dibromo-3-Chloropropane	30	U 12/17/07	30	8.3
95-50-1	1,2-Dichlorobenzene	30	U	30	1.9
107-06-2	1,2-Dichloroethane	30	U	30	3.0
78-87-5	1,2-Dichloropropane	30	U	30	3.3
541-73-1	1,3-Dichlorobenzene	30	U	30	2.5
106-46-7	1,4-Dichlorobenzene	30	U	30	1.5
78-93-3	2-Butanone (MEK)	30	U	30	8.0
591-78-6	2-Hexanone	30	U	30	6.2
108-10-1	4-Methyl-2-pentanone (MIBK)	30	U	30	8.6
67-64-1	Acetone	30	U	30	13
71-43-2	Benzene	30	U	30	2.3
75-25-2	Bromoform	30	U	30	3.3
74-83-9	Bromomethane	30	U	30	4.7
75-15-0	Carbon disulfide	30	U	30	1.5
56-23-5	Carbon tetrachloride	30	U	30	3.0
108-90-7	Chlorobenzene	30	U	30	2.2
124-48-1	Chlorodibromomethane	30	U	30	1.5
75-00-3	Chloroethane	30	U	30	3.6
67-66-3	Chloroform	30	U	30	1.5
74-87-3	Chloromethane	30	U	30	2.1
156-59-2	cis-1,2-Dichloroethene	30	U	30	1.9
10061-01-5	cis-1,3-Dichloropropene	30	U	30	2.6
110-82-7	Cyclohexane	30	U	30	1.8
75-27-4	Dichlorobromomethane	30	U	30	2.5
75-71-8	Dichlorodifluoromethane	30	U	30	2.6
100-41-4	Ethylbenzene	30	U	30	2.2
106-93-4	Ethylene Dibromide	30	U	30	4.4
98-82-8	Isopropylbenzene	30	U	30	1.5

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 | Lab Sample ID: 680-32635-6

Matrix: Solid | Lab File ID: m00693.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 02:47

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.3

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	30	U	30	6.5
1634-04-4	Methyl tert-butyl ether	30	U	30	6.5
108-87-2	Methylcyclohexane	30	U	30	2.1
75-09-2	Methylene Chloride	30	U	30	3.0
100-42-5	Styrene	30	U	30	2.0
127-18-4	Tetrachloroethene	30	U	30	2.2
108-88-3	Toluene	30	U	30	2.3
156-60-5	trans-1,2-Dichloroethene	30	U	30	2.9
10061-02-6	trans-1,3-Dichloropropene	30	U	30	2.6
79-01-6	Trichloroethene	30	U	30	3.0
75-69-4	Trichlorofluoromethane	30	U	30	4.4
75-01-4	Vinyl chloride	30	U	30	1.7
1330-20-7	Xylenes, Total	30	U	30	6.8

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 | Lab Sample ID: 680-32635-6

Matrix: Solid | Lab File ID: m00693.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.0 (g) | Date Analyzed: 12/15/2007 02:47

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.3

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 1 | TIC Total: 78

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.83	78	

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GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 MS | Lab Sample ID: 680-32635-6 MS

Matrix: Solid | Lab File ID: m00694.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 5.1 (g) | Date Analyzed: 12/15/2007 03:09

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.3

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	29	U	29	1.7
79-34-5	1,1,2,2-Tetrachloroethane	29	U	29	4.1
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	29	U	29	1.9
79-00-5	1,1,2-Trichloroethane	29	U	29	3.5
75-34-3	1,1-Dichloroethane	29	U	29	1.5
75-35-4	1,1-Dichloroethene	190		29	1.6
120-82-1	1,2,4-Trichlorobenzene	29	U	29	2.9
96-12-8	1,2-Dibromo-3-Chloropropane	29	U	29	8.1
95-50-1	1,2-Dichlorobenzene	29	U	29	1.9
107-06-2	1,2-Dichloroethane	29	U	29	2.9
78-87-5	1,2-Dichloropropane	29	U	29	3.2
541-73-1	1,3-Dichlorobenzene	29	U	29	2.4
106-46-7	1,4-Dichlorobenzene	29	U	29	1.5
78-93-3	2-Butanone (MEK)	29	U	29	7.8
591-78-6	2-Hexanone	29	U	29	6.1
108-10-1	4-Methyl-2-pentanone (MIBK)	29	U	29	8.4
67-64-1	Acetone	29	U	29	13
71-43-2	Benzene	170		29	2.3
75-25-2	Bromoform	29	U	29	3.2
74-83-9	Bromomethane	29	U	29	4.6
75-15-0	Carbon disulfide	29	U	29	1.5
56-23-5	Carbon tetrachloride	29	U	29	2.9
108-90-7	Chlorobenzene	160		29	2.1
124-48-1	Chlorodibromomethane	29	U	29	1.5
75-00-3	Chloroethane	29	U	29	3.5
67-66-3	Chloroform	29	U	29	1.5
74-87-3	Chloromethane	29	U	29	2.1
156-59-2	cis-1,2-Dichloroethene	29	U	29	1.8
10061-01-5	cis-1,3-Dichloropropene	29	U	29	2.5
110-82-7	Cyclohexane	29	U	29	1.7
75-27-4	Dichlorobromomethane	29	U	29	2.4
75-71-8	Dichlorodifluoromethane	29	U	29	2.6
100-41-4	Ethylbenzene	29	U	29	2.2
106-93-4	Ethylene Dibromide	29	U	29	4.4
98-82-8	Isopropylbenzene	29	U	29	1.5

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-2
SDG No.: YORK16
Client Sample ID: YS08-SD01-1207 MS
Lab Sample ID: 680-32635-6 MS
Matrix: Solid
Lab File ID: m00694.d
Analysis Method: OLM04.3/Vol
Date Received: 12/12/2007 09:23
Sample wt/vol: 5.1 (g)
Date Analyzed: 12/15/2007 03:09
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 66.3
Analy. Batch No.: 93670
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	29	U	29	6.4
1634-04-4	Methyl tert-butyl ether	29	U	29	6.4
108-87-2	Methylcyclohexane	29	U	29	2.1
75-09-2	Methylene Chloride	29	U	29	2.9
100-42-5	Styrene	29	U	29	1.9
127-18-4	Tetrachloroethene	29	U	29	2.1
108-88-3	Toluene	170		29	2.3
156-60-5	trans-1,2-Dichloroethene	29	U	29	2.8
10061-02-6	trans-1,3-Dichloropropene	29	U	29	2.5
79-01-6	Trichloroethene	140		29	2.9
75-69-4	Trichlorofluoromethane	29	U	29	4.4
75-01-4	Vinyl chloride	29	U	29	1.7
1330-20-7	Xylenes, Total	29	U	29	6.7

021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 MSD | Lab Sample ID: 680-32635-6 MSD

Matrix: Solid | Lab File ID: m00695.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 6.0 (g) | Date Analyzed: 12/15/2007 03:32

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.3

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	25	U	25	1.4
79-34-5	1,1,2,2-Tetrachloroethane	25	U	25	3.5
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	25	U	25	1.6
79-00-5	1,1,2-Trichloroethane	25	U	25	3.0
75-34-3	1,1-Dichloroethane	25	U	25	1.2
75-35-4	1,1-Dichloroethene	180		25	1.3
120-82-1	1,2,4-Trichlorobenzene	25	U	25	2.5
96-12-8	1,2-Dibromo-3-Chloropropane	25	U	25	6.9
95-50-1	1,2-Dichlorobenzene	25	U	25	1.6
107-06-2	1,2-Dichloroethane	25	U	25	2.5
78-87-5	1,2-Dichloropropane	25	U	25	2.7
541-73-1	1,3-Dichlorobenzene	25	U	25	2.0
106-46-7	1,4-Dichlorobenzene	25	U	25	1.3
78-93-3	2-Butanone (MEK)	25	U	25	6.7
591-78-6	2-Hexanone	25	U	25	5.2
108-10-1	4-Methyl-2-pentanone (MIBK)	25	U	25	7.2
67-64-1	Acetone	25	U	25	11
71-43-2	Benzene	160		25	2.0
75-25-2	Bromoform	25	U	25	2.7
74-83-9	Bromomethane	25	U	25	4.0
75-15-0	Carbon disulfide	25	U	25	1.3
56-23-5	Carbon tetrachloride	25	U	25	2.5
108-90-7	Chlorobenzene	140		25	1.8
124-48-1	Chlorodibromomethane	25	U	25	1.2
75-00-3	Chloroethane	25	U	25	3.0
67-66-3	Chloroform	25	U	25	1.2
74-87-3	Chloromethane	25	U	25	1.8
156-59-2	cis-1,2-Dichloroethene	25	U	25	1.6
10061-01-5	cis-1,3-Dichloropropene	25	U	25	2.1
110-82-7	Cyclohexane	25	U	25	1.5
75-27-4	Dichlorobromomethane	25	U	25	2.0
75-71-8	Dichlorodifluoromethane	25	U	25	2.2
100-41-4	Ethylbenzene	25	U	25	1.9
106-93-4	Ethylene Dibromide	25	U	25	3.7
98-82-8	Isopropylbenzene	25	U	25	1.2

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 MSD | Lab Sample ID: 680-32635-6 MSD

Matrix: Solid | Lab File ID: m00695.d

Analysis Method: OLM04.3/Vol | Date Received: 12/12/2007 09:23

Sample wt/vol: 6.0 (g) | Date Analyzed: 12/15/2007 03:32

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.3

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	25	U	25	5.4
1634-04-4	Methyl tert-butyl ether	25	U	25	5.4
108-87-2	Methylcyclohexane	25	U	25	1.8
75-09-2	Methylene Chloride	25	U	25	2.5
100-42-5	Styrene	25	U	25	1.6
127-18-4	Tetrachloroethene	25	U	25	1.8
108-88-3	Toluene	150		25	2.0
156-60-5	trans-1,2-Dichloroethene	25	U	25	2.4
10061-02-6	trans-1,3-Dichloropropene	25	U	25	2.1
79-01-6	Trichloroethene	130		25	2.5
75-69-4	Trichlorofluoromethane	25	U	25	3.7
75-01-4	Vinyl chloride	25	U	25	1.4
1330-20-7	Xylenes, Total	25	U	25	5.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-2
SDG No.: YORK16
Client Sample ID: YS22-SD03-1207
Lab Sample ID: 680-32610-5
Matrix: Solid
Lab File ID: t5041.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 30.45 (g)
Date Extracted: 12/12/2007 13:28
Level: (low/med) Low
Date Analyzed: 01/06/2008 14:14
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 77.9
Analy. Batch No.: 95276
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	2900	U	2900	2900
108-60-1	2,2'-oxybis[1-chloropropane]	2900	U	2900	2900
95-95-4	2,4,5-Trichlorophenol	2900	U	2900	2900
88-06-2	2,4,6-Trichlorophenol	2900	U	2900	2900
120-83-2	2,4-Dichlorophenol	2900	U	2900	2900
105-67-9	2,4-Dimethylphenol	2900	U	2900	2900
51-28-5	2,4-Dinitrophenol	15000	U	15000	15000
121-14-2	2,4-Dinitrotoluene	2900	U	2900	2900
606-20-2	2,6-Dinitrotoluene	2900	U	2900	2900
91-58-7	2-Chloronaphthalene	2900	U	2900	2900
95-57-8	2-Chlorophenol	2900	U	2900	2900
91-57-6	2-Methylnaphthalene	2900	U	2900	2900
95-48-7	2-Methylphenol	2900	U	2900	2900
88-74-4	2-Nitroaniline	15000	U	15000	15000
88-75-5	2-Nitrophenol	2900	U	2900	2900
91-94-1	3,3'-Dichlorobenzidine	2900	U	2900	2900
99-09-2	3-Nitroaniline	15000	U	15000	15000
534-52-1	4,6-Dinitro-2-methylphenol	15000	U	15000	15000
101-55-3	4-Bromophenyl phenyl ether	2900	U	2900	2900
59-50-7	4-Chloro-3-methylphenol	2900	U	2900	2900
106-47-8	4-Chloroaniline	5900	U	5900	5900
7005-72-3	4-Chlorophenyl phenyl ether	2900	U	2900	2900
106-44-5	4-Methylphenol	2900	U	2900	2900
100-01-6	4-Nitroaniline	15000	U	15000	15000
100-02-7	4-Nitrophenol	15000	U	15000	15000
83-32-9	Acenaphthene	2900	U	2900	2900
208-96-8	Acenaphthylene	2900	U	2900	2900
98-86-2	Acetophenone	2900	U	2900	2900
120-12-7	Anthracene	2900	U	2900	2900
1912-24-9	Atrazine	2900	U	2900	2900
100-52-7	Benzaldehyde	2900	U	2900	2900
56-55-3	Benzo[a]anthracene	2900	U	2900	2900
50-32-8	Benzo[a]pyrene	2900	U	2900	2900
205-99-2	Benzo[b]fluoranthene	2900	U	2900	2900
191-24-2	Benzo[g,h,i]perylene	2900	U	2900	2900

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS22-SD03-1207 | Lab Sample ID: 680-32610-5

Matrix: Solid | Lab File ID: t5041.d

Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29

Sample wt/vol: 30.45 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/06/2008 14:14

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 77.9

Analy. Batch No.: 95276 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	2900	U	2900	2900
111-91-1	Bis(2-chloroethoxy)methane	2900	U	2900	2900
111-44-4	Bis(2-chloroethyl)ether	2900	U	2900	2900
117-81-7	Bis(2-ethylhexyl) phthalate	2900	U	2900	2900
85-68-7	Butyl benzyl phthalate	2900	U	2900	2900
105-60-2	Caprolactam	2900	U	2900	2900
86-74-8	Carbazole	2900	U	2900	2900
218-01-9	Chrysene	2900	U	2900	2900
84-74-2	Di-n-butyl phthalate	2900	U	2900	2900
117-84-0	Di-n-octyl phthalate	2900	U	2900	2900
53-70-3	Dibenz(a,h)anthracene	2900	U	2900	2900
132-64-9	Dibenzofuran	2900	U	2900	2900
84-66-2	Diethyl phthalate	2900	U	2900	2900
131-11-3	Dimethyl phthalate	2900	U	2900	2900
206-44-0	Fluoranthene	2900	U	2900	2900
86-73-7	Fluorene	2900	U	2900	2900
118-74-1	Hexachlorobenzene	2900	U	2900	2900
87-68-3	Hexachlorobutadiene	2900	U	2900	2900
77-47-4	Hexachlorocyclopentadiene	2900	U	2900	2900
67-72-1	Hexachloroethane	2900	U	2900	2900
193-39-5	Indeno[1,2,3-cd]pyrene	2900	U	2900	2900
78-59-1	Isophorone	2900	U	2900	2900
621-64-7	N-Nitrosodi-n-propylamine	2900	U	2900	2900
86-30-6	N-Nitrosodiphenylamine	2900	U	2900	2900
91-20-3	Naphthalene	2900	U	2900	2900
98-95-3	Nitrobenzene	2900	U	2900	2900
87-86-5	Pentachlorophenol	15000	U	15000	15000
85-01-8	Phenanthrene	2900	U	2900	2900
108-95-2	Phenol	2900	U	2900	2900
129-00-0	Pyrene	2900	U	2900	2900

UM 021608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS22-SD03-1207 | Lab Sample ID: 680-32610-5

Matrix: Solid | Lab File ID: t5041.d

Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29

Sample wt/vol: 30.45 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/06/2008 14:14

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 77.9

Analy. Batch No.: 95276 | Units: ug/Kg

Number TICs Found: 28 | TIC Total: 77660

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	32000	A B,BL
74663-85-7	Cyclopropane, nonyl-	6.90	1000	N
	Unknown	7.79	2400	
	Unknown	9.55	5700	
123-95-5	Octadecanoic acid, butyl ester	10.19	2800	N B,BL
629-92-5	Nonadecane	10.23	930	N
822-20-8	1-Heptadecanol, acetate	10.26	650	N
	Unknown	10.46	1400	
	Unknown	10.52	1400	
593-45-3	Octadecane	10.54	700	N
	Unknown	10.60	1700	
	Unknown	10.63	1700	
	Unknown	10.84	1600	
18435-45-5	1-Nonadecene	11.37	1100	N
630-03-5	Nonacosane	11.80	860	N
	Unknown Organic Acid	12.05	890	
629-92-5	Nonadecane	12.56	760	N
57-88-5	Cholesterol	13.06	1400	N
	Unknown	13.13	700	
474-67-9	Ergosta-5,22-dien-3-ol, (3.beta.,22E)-	13.27	730	N
	Unknown	13.77	4500	
	Unknown	13.93	740	
	Unknown	14.15	2600	
	Unknown	14.25	2500	
	Unknown	14.49	1400	
	Unknown	14.72	2600	
	Unknown	14.82	1100	
	Unknown	14.94	1800	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YSA14-SD01-1207 | Lab Sample ID: 680-32610-7

Matrix: Solid | Lab File ID: t5042.d

Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29

Sample wt/vol: 30.25 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/06/2008 14:35

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 66.1

Analy. Batch No.: 95276 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1900	U	1900	1900
108-60-1	2,2'-oxybis[1-chloropropane]	1900	U	1900	1900
95-95-4	2,4,5-Trichlorophenol	1900	U	1900	1900
88-06-2	2,4,6-Trichlorophenol	1900	U	1900	1900
120-83-2	2,4-Dichlorophenol	1900	U	1900	1900
105-67-9	2,4-Dimethylphenol	1900	U	1900	1900
51-28-5	2,4-Dinitrophenol	10000	U	10000	10000
121-14-2	2,4-Dinitrotoluene	1900	U	1900	1900
606-20-2	2,6-Dinitrotoluene	1900	U	1900	1900
91-58-7	2-Chloronaphthalene	1900	U	1900	1900
95-57-8	2-Chlorophenol	1900	U	1900	1900
91-57-6	2-Methylnaphthalene	1900	U	1900	1900
95-48-7	2-Methylphenol	1900	U	1900	1900
88-74-4	2-Nitroaniline	10000	U	10000	10000
88-75-5	2-Nitrophenol	1900	U	1900	1900
91-94-1	3,3'-Dichlorobenzidine	1900	U	1900	1900
99-09-2	3-Nitroaniline	10000	U	10000	10000
534-52-1	4,6-Dinitro-2-methylphenol	10000	U	10000	10000
101-55-3	4-Bromophenyl phenyl ether	1900	U	1900	1900
59-50-7	4-Chloro-3-methylphenol	1900	U	1900	1900
106-47-8	4-Chloroaniline	3900	U	3900	3900
7005-72-3	4-Chlorophenyl phenyl ether	1900	U	1900	1900
106-44-5	4-Methylphenol	1900	U	1900	1900
100-01-6	4-Nitroaniline	10000	U	10000	10000
100-02-7	4-Nitrophenol	10000	U	10000	10000
83-32-9	Acenaphthene	1900	U	1900	1900
208-96-8	Acenaphthylene	1900	U	1900	1900
98-86-2	Acetophenone	1900	U	1900	1900
120-12-7	Anthracene	1900	U	1900	1900
1912-24-9	Atrazine	1900	U	1900	1900
100-52-7	Benzaldehyde	1900	U	1900	1900
56-55-3	Benzo[a]anthracene	1900	U	1900	1900
50-32-8	Benzo[a]pyrene	1900	U	1900	1900
205-99-2	Benzo[b]fluoranthene	1900	U	1900	1900
191-24-2	Benzo[g,h,i]perylene	1900	U	1900	1900

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32610-2
SDG No.: YORK16
Client Sample ID: YSA14-SD01-1207
Lab Sample ID: 680-32610-7
Matrix: Solid
Lab File ID: t5042.d
Analysis Method: OLM04.3/SV
Date Received: 12/11/2007 09:29
Sample wt/vol: 30.25 (g)
Date Extracted: 12/12/2007 13:28
Level: (low/med) Low
Date Analyzed: 01/06/2008 14:35
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 66.1
Analy. Batch No.: 95276
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1900	U	1900	1900
111-91-1	Bis(2-chloroethoxy)methane	1900	U	1900	1900
111-44-4	Bis(2-chloroethyl)ether	1900	U	1900	1900
117-81-7	Bis(2-ethylhexyl) phthalate	1900	U	1900	1900
85-68-7	Butyl benzyl phthalate	1900	U	1900	1900
105-60-2	Caprolactam	1900	U	1900	1900
86-74-8	Carbazole	1900	U	1900	1900
218-01-9	Chrysene	1900	U	1900	1900
84-74-2	Di-n-butyl phthalate	1900	U	1900	1900
117-84-0	Di-n-octyl phthalate	1900	U	1900	1900
53-70-3	Dibenz(a,h)anthracene	1900	U	1900	1900
132-64-9	Dibenzofuran	1900	U	1900	1900
84-66-2	Diethyl phthalate	1900	U	1900	1900
131-11-3	Dimethyl phthalate	1900	U	1900	1900
206-44-0	Fluoranthene	1900	U	1900	1900
86-73-7	Fluorene	1900	U	1900	1900
118-74-1	Hexachlorobenzene	1900	U	1900	1900
87-68-3	Hexachlorobutadiene	1900	U	1900	1900
77-47-4	Hexachlorocyclopentadiene	1900	U	1900	1900
67-72-1	Hexachloroethane	1900	U	1900	1900
193-39-5	Indeno[1,2,3-cd]pyrene	1900	U	1900	1900
78-59-1	Isophorone	1900	U	1900	1900
621-64-7	N-Nitrosodi-n-propylamine	1900	U	1900	1900
86-30-6	N-Nitrosodiphenylamine	1900	U	1900	1900
91-20-3	Naphthalene	1900	U	1900	1900
98-95-3	Nitrobenzene	1900	U	1900	1900
87-86-5	Pentachlorophenol	10000	U	10000	10000
85-01-8	Phenanthrene	1900	U	1900	1900
108-95-2	Phenol	1900	U	1900	1900
129-00-0	Pyrene	1900	U	1900	1900

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YSA14-SD01-1207 | Lab Sample ID: 680-32610-7

Matrix: Solid | Lab File ID: t5042.d

Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29

Sample wt/vol: 30.25 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/06/2008 14:35

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 66.1

Analy. Batch No.: 95276 | Units: ug/Kg

Number TICs Found: 30 | TIC Total: 56320

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	~~22000~~	~~A~~ B,BL
294-62-2	Cyclododecane	6.90	570	N
	Unknown	7.79	1600	
	Unknown	9.54	3700	
123-95-5	Octadecanoic acid, butyl ester	10.19	~~2100~~	~~N~~ B,BL
	Unknown	10.24	1600	
	Unknown	10.25	1600	
	Unknown	10.46	1700	
	Unknown	10.52	430	
630-06-8	Hexatriacontane	10.54	500	N
	Unknown	10.61	1000	
	Unknown	10.64	1500	
791-28-6	Phosphine oxide, triphenyl-	10.84	1100	N
593-49-7	Heptacosane	11.15	500	N
112-95-8	Eicosane	11.46	~~460~~	~~N~~ B,BL
630-03-5	Nonacosane	11.79	680	N
593-49-7	Heptacosane	12.56	530	N
0-00-0	26-Nor-5-cholesten-3.beta.25-one	13.06	1100	N
	Unknown	13.26	750	
	Unknown	13.34	580	
	Unknown	13.50	1500	
	Unknown	13.63	720	
	Unknown	13.77	1900	
83-47-6	.gamma.-Sitosterol	14.15	2000	N
	Unknown	14.25	1400	
	Unknown	14.36	480	
	Unknown	14.49	1100	
	Unknown	14.72	1200	
	Unknown	14.82	720	
	Unknown	14.94	1300	

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GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01-1207 | Lab Sample ID: 680-32610-11

Matrix: Solid | Lab File ID: t5043.d

Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29

Sample wt/vol: 30.19 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/06/2008 14:57

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 58.3

Analy. Batch No.: 95276 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1600	U	1600	1600
108-60-1	2,2'-oxybis[1-chloropropane]	1600	U	1600	1600
95-95-4	2,4,5-Trichlorophenol	1600	U	1600	1600
88-06-2	2,4,6-Trichlorophenol	1600	U	1600	1600
120-83-2	2,4-Dichlorophenol	1600	U	1600	1600
105-67-9	2,4-Dimethylphenol	1600	U	1600	1600
51-28-5	2,4-Dinitrophenol	8100	U	8100	8100
121-14-2	2,4-Dinitrotoluene	1600	U	1600	1600
606-20-2	2,6-Dinitrotoluene	1600	U	1600	1600
91-58-7	2-Chloronaphthalene	1600	U	1600	1600
95-57-8	2-Chlorophenol	1600	U	1600	1600
91-57-6	2-Methylnaphthalene	1600	U	1600	1600
95-48-7	2-Methylphenol	1600	U	1600	1600
88-74-4	2-Nitroaniline	8100	U	8100	8100
88-75-5	2-Nitrophenol	1600	U	1600	1600
91-94-1	3,3'-Dichlorobenzidine	1600	U	1600	1600
99-09-2	3-Nitroaniline	8100	U	8100	8100
534-52-1	4,6-Dinitro-2-methylphenol	8100	U	8100	8100
101-55-3	4-Bromophenyl phenyl ether	1600	U	1600	1600
59-50-7	4-Chloro-3-methylphenol	1600	U	1600	1600
106-47-8	4-Chloroaniline	3100	U	3100	3100
7005-72-3	4-Chlorophenyl phenyl ether	1600	U	1600	1600
106-44-5	4-Methylphenol	1600	U	1600	1600
100-01-6	4-Nitroaniline	8100	U	8100	8100
100-02-7	4-Nitrophenol	8100	U	8100	8100
83-32-9	Acenaphthene	1600	U	1600	1600
208-96-8	Acenaphthylene	1600	U	1600	1600
98-86-2	Acetophenone	1600	U	1600	1600
120-12-7	Anthracene	1600	U	1600	1600
1912-24-9	Atrazine	1600	U	1600	1600
100-52-7	Benzaldehyde	1600	U	1600	1600
56-55-3	Benzo[a]anthracene	1600	U	1600	1600
50-32-8	Benzo[a]pyrene	1600	U	1600	1600
205-99-2	Benzo[b]fluoranthene	1600	U	1600	1600
191-24-2	Benzo[g,h,i]perylene	1600	U	1600	1600

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01-1207 | Lab Sample ID: 680-32610-11

Matrix: Solid | Lab File ID: t5043.d

Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29

Sample wt/vol: 30.19 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/06/2008 14:57

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 58.3

Analy. Batch No.: 95276 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1600	U	1600	1600
111-91-1	Bis(2-chloroethoxy)methane	1600	U	1600	1600
111-44-4	Bis(2-chloroethyl)ether	1600	U	1600	1600
117-81-7	Bis(2-ethylhexyl) phthalate	1600	U	1600	1600
85-68-7	Butyl benzyl phthalate	1600	U	1600	1600
105-60-2	Caprolactam	1600	U	1600	1600
86-74-8	Carbazole	1600	U	1600	1600
218-01-9	Chrysene	1600	U	1600	1600
84-74-2	Di-n-butyl phthalate	1600	U	1600	1600
117-84-0	Di-n-octyl phthalate	1600	U	1600	1600
53-70-3	Dibenz(a,h)anthracene	1600	U	1600	1600
132-64-9	Dibenzofuran	1600	U	1600	1600
84-66-2	Diethyl phthalate	1600	U	1600	1600
131-11-3	Dimethyl phthalate	1600	U	1600	1600
206-44-0	Fluoranthene	1600	U	1600	1600
86-73-7	Fluorene	1600	U	1600	1600
118-74-1	Hexachlorobenzene	1600	U	1600	1600
87-68-3	Hexachlorobutadiene	1600	U	1600	1600
77-47-4	Hexachlorocyclopentadiene	1600	U	1600	1600
67-72-1	Hexachloroethane	1600	U	1600	1600
193-39-5	Indeno(1,2,3-cd)pyrene	1600	U	1600	1600
78-59-1	Isophorone	1600	U	1600	1600
621-64-7	N-Nitrosodi-n-propylamine	1600	U	1600	1600
86-30-6	N-Nitrosodiphenylamine	1600	U	1600	1600
91-20-3	Naphthalene	1600	U	1600	1600
98-95-3	Nitrobenzene	1600	U	1600	1600
87-86-5	Pentachlorophenol	8100	U	8100	8100
85-01-8	Phenanthrene	1600	U	1600	1600
108-95-2	Phenol	1600	U	1600	1600
129-00-0	Pyrene	1600	U	1600	1600

021608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2
SDG No.: YORK16
Client Sample ID: YBKG-SD01-1207 | Lab Sample ID: 680-32610-11
Matrix: Solid | Lab File ID: t5043.d
Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29
Sample wt/vol: 30.19 (g) | Date Extracted: 12/12/2007 13:28
Level: (low/med) Low | Date Analyzed: 01/06/2008 14:57
Con. Extract Vol.: 10 (mL) | Dilution Factor: 1
Injection Volume: | Extract. Method: OLM04.3/SV
GPC Cleanup: (Y/N) Y | % Moisture: 58.3
Analy. Batch No.: 95276 | Units: ug/Kg
Number TICs Found: 19 | TIC Total: 31050

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.13	15000	~~A~~ B,BL
112-42-5	1-Undecanol	6.90	610	N
	Unknown	7.79	1300	
	Unknown	9.55	2500	
123-95-5	Octadecanoic acid, butyl ester	10.19	1600	~~N~~ B,BL
629-97-0	Docosane	10.24	910	N
	Unknown	10.26	790	
	Unknown	10.33	350	
	Unknown	10.46	700	
593-45-3	Octadecane	10.54	770	N
	Unknown	10.60	1100	
	Unknown	10.63	540	
	Unknown Organic Acid	10.84	750	
35599-77-0	Tridecane, 1-iodo-	11.15	410	N
629-94-7	Heneicosane	11.46	350	N
629-92-5	Nonadecane	11.79	350	N
	Unknown	13.77	870	
	Unknown	14.15	1600	
	Unknown	14.25	550	

MM 021608

FORM I

GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01P-1207 | Lab Sample ID: 680-32610-13

Matrix: Solid | Lab File ID: t5066.d

Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29

Sample wt/vol: 30.06 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/07/2008 12:53

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 54.4

Analy. Batch No.: 95294 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1400	U	1400	1400
108-60-1	2,2'-oxybis[1-chloropropane]	1400	U	1400	1400
95-95-4	2,4,5-Trichlorophenol	1400	U	1400	1400
88-06-2	2,4,6-Trichlorophenol	1400	U	1400	1400
120-83-2	2,4-Dichlorophenol	1400	U	1400	1400
105-67-9	2,4-Dimethylphenol	1400	U	1400	1400
51-28-5	2,4-Dinitrophenol	7400	U	7400	7400
121-14-2	2,4-Dinitrotoluene	1400	U	1400	1400
606-20-2	2,6-Dinitrotoluene	1400	U	1400	1400
91-58-7	2-Chloronaphthalene	1400	U	1400	1400
95-57-8	2-Chlorophenol	1400	U	1400	1400
91-57-6	2-Methylnaphthalene	1400	U	1400	1400
95-48-7	2-Methylphenol	1400	U	1400	1400
88-74-4	2-Nitroaniline	7400	U	7400	7400
88-75-5	2-Nitrophenol	1400	U	1400	1400
91-94-1	3,3'-Dichlorobenzidine	1400	U	1400	1400
99-09-2	3-Nitroaniline	7400	U	7400	7400
534-52-1	4,6-Dinitro-2-methylphenol	7400	U	7400	7400
101-55-3	4-Bromophenyl phenyl ether	1400	U	1400	1400
59-50-7	4-Chloro-3-methylphenol	1400	U	1400	1400
106-47-8	4-Chloroaniline	2900	U	2900	2900
7005-72-3	4-Chlorophenyl phenyl ether	1400	U	1400	1400
106-44-5	4-Methylphenol	1400	U	1400	1400
100-01-6	4-Nitroaniline	7400	U	7400	7400
100-02-7	4-Nitrophenol	7400	U	7400	7400
83-32-9	Acenaphthene	1400	U	1400	1400
208-96-8	Acenaphthylene	1400	U	1400	1400
98-86-2	Acetophenone	1400	U	1400	1400
120-12-7	Anthracene	1400	U	1400	1400
1912-24-9	Atrazine	1400	U	1400	1400
100-52-7	Benzaldehyde	1400	U	1400	1400
56-55-3	Benzo[a]anthracene	1400	U	1400	1400
50-32-8	Benzo[a]pyrene	1400	U	1400	1400
205-99-2	Benzo[b]fluoranthene	1400	U	1400	1400
191-24-2	Benzo[g,h,i]perylene	1400	U	1400	1400

020

021608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01P-1207 | Lab Sample ID: 680-32610-13

Matrix: Solid | Lab File ID: t5066.d

Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29

Sample wt/vol: 30.06 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/07/2008 12:53

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 54.4

Analy. Batch No.: 95294 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1400	U	1400	1400
111-91-1	Bis(2-chloroethoxy)methane	1400	U	1400	1400
111-44-4	Bis(2-chloroethyl)ether	1400	U	1400	1400
117-81-7	Bis(2-ethylhexyl) phthalate	1400	U	1400	1400
85-68-7	Butyl benzyl phthalate	1400	U	1400	1400
105-60-2	Caprolactam	1400	U	1400	1400
86-74-8	Carbazole	1400	U	1400	1400
218-01-9	Chrysene	1400	U	1400	1400
84-74-2	Di-n-butyl phthalate	1400	U	1400	1400
117-84-0	Di-n-octyl phthalate	1400	U	1400	1400
53-70-3	Dibenz(a,h)anthracene	1400	U	1400	1400
132-64-9	Dibenzofuran	1400	U	1400	1400
84-66-2	Diethyl phthalate	1400	U	1400	1400
131-11-3	Dimethyl phthalate	1400	U	1400	1400
206-44-0	Fluoranthene	1400	U	1400	1400
86-73-7	Fluorene	1400	U	1400	1400
118-74-1	Hexachlorobenzene	1400	U	1400	1400
87-68-3	Hexachlorobutadiene	1400	U	1400	1400
77-47-4	Hexachlorocyclopentadiene	1400	U	1400	1400
67-72-1	Hexachloroethane	1400	U	1400	1400
193-39-5	Indeno[1,2,3-cd]pyrene	1400	U	1400	1400
78-59-1	Isophorone	1400	U	1400	1400
621-64-7	N-Nitrosodi-n-propylamine	1400	U	1400	1400
86-30-6	N-Nitrosodiphenylamine	1400	U	1400	1400
91-20-3	Naphthalene	1400	U	1400	1400
98-95-3	Nitrobenzene	1400	U	1400	1400
87-86-5	Pentachlorophenol	7400	U	7400	7400
85-01-8	Phenanthrene	1400	U	1400	1400
108-95-2	Phenol	1400	U	1400	1400
129-00-0	Pyrene	1400	U	1400	1400

LM 021608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD01P-1207 | Lab Sample ID: 680-32610-13

Matrix: Solid | Lab File ID: t5066.d

Analysis Method: OLM04.3/SV | Date Received: 12/11/2007 09:29

Sample wt/vol: 30.06 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/07/2008 12:53

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 54.4

Analy. Batch No.: 95294 | Units: ug/Kg

Number TICs Found: 23 | TIC Total: 36700

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.11	14000	A
293-96-9	Cyclodecane	6.89	420	N
	Unknown	7.78	960	
	Unknown	8.98	430	
	Unknown	9.16	330	
	Unknown	9.44	450	
	Unknown Organic Acid	9.54	4800	
112-95-8	Eicosane	9.58	370	N
822-23-1	Acetic acid, octadecyl ester	9.60	470	N
629-97-0	Docosane	9.90	430	N
123-95-5	Octadecanoic acid, butyl ester	10.18	3100	N
646-31-1	Tetracosane	10.22	780	N
593-45-3	Octadecane	10.53	640	N
	Unknown	10.84	1500	
544-76-3	Hexadecane	11.14	730	N
646-31-1	Tetracosane	11.45	780	N
629-92-5	Nonadecane	11.78	560	N
629-94-7	Heneicosane	12.15	640	N
629-97-0	Docosane	12.55	370	N
	Unknown	13.48	360	
35060-26-5	D:B-Friedo-18,19-secolup-19-ene, 3,10-ep	13.74	980	N
	Unknown	14.13	2500	
	Unknown	14.23	1100	

LM 021608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD04-1207 | Lab Sample ID: 680-32635-2

Matrix: Solid | Lab File ID: t4339.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.05 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 16:18

Conc. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 64.2

Analy. Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
9[illegible]-52-4	1,1'-Biphenyl	1800	U	1800	1800
[illegible]8-60-1	2,2'-oxybis[1-chloropropane]	1800	U	1800	1800
9[illegible]-95-4	2,4,5-Trichlorophenol	1800	U	1800	1800
88-06-2	2,4,6-Trichlorophenol	1800	U	1800	1800
[illegible]0-83-2	2,4-Dichlorophenol	1800	U	1800	1800
105-67-9	2,4-Dimethylphenol	1800	U	1800	1800
5[illegible]-28-5	2,4-Dinitrophenol	9500	U	9500	9500
[illegible]1-14-2	2,4-Dinitrotoluene	1800	U	1800	1800
[illegible]6-20-2	2,6-Dinitrotoluene	1800	U	1800	1800
9[illegible]-58-7	2-Chloronaphthalene	1800	U	1800	1800
9[illegible]-57-8	2-Chlorophenol	1800	U	1800	1800
9[illegible]-57-6	2-Methylnaphthalene	1800	U	1800	1800
9[illegible]-48-7	2-Methylphenol	1800	U	1800	1800
8[illegible]-74-4	2-Nitroaniline	9500	U	9500	9500
8[illegible]-75-5	2-Nitrophenol	1800	U	1800	1800
[illegible]-94-1	3,3'-Dichlorobenzidine	1800	U	1800	1800
[illegible]-09-2	3-Nitroaniline	9500	U	9500	9500
[illegible]4-52-1	4,6-Dinitro-2-methylphenol	9500	U	9500	9500
[illegible]1-55-3	4-Bromophenyl phenyl ether	1800	U	1800	1800
[illegible]-50-7	4-Chloro-3-methylphenol	1800	U	1800	1800
[illegible]6-47-8	4-Chloroaniline	3700	U	3700	3700
[illegible]05-72-3	4-Chlorophenyl phenyl ether	1800	U	1800	1800
[illegible]-44-5	4-Methylphenol	1800	U	1800	1800
[illegible]-01-6	4-Nitroaniline	9500	U	9500	9500
[illegible]-02-7	4-Nitrophenol	9500	U	9500	9500
[illegible]-32-9	Acenaphthene	1800	U	1800	1800
[illegible]-96-8	Acenaphthylene	1800	U	1800	1800
[illegible]-86-2	Acetophenone	1800	U	1800	1800
[illegible]-12-7	Anthracene	1800	U	1800	1800
1[illegible]-24-9	Atrazine	1800	U	1800	1800
[illegible]-52-7	Benzaldehyde	1800	U	1800	1800
[illegible]-55-3	Benzo[a]anthracene	1800	U	1800	1800
[illegible]-32-8	Benzo[a]pyrene	1800	U	1800	1800
205-99-2	Benzo[b]fluoranthene	1800	U	1800	1800
[illegible]1-24-2	Benzo[g,h,i]perylene	1800	U	1800	1800

VM 021408

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD04-1207 | Lab Sample ID: 680-32635-2

Matrix: Solid | Lab File ID: t4339.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.05 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 16:18

Conc. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 64.2

Anly. Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1800	U	1800	1800
111-91-1	Bis(2-chloroethoxy)methane	1800	U	1800	1800
111-44-4	Bis(2-chloroethyl)ether	1800	U	1800	1800
117-81-7	Bis(2-ethylhexyl) phthalate	1800	U	1800	1800
85-68-7	Butyl benzyl phthalate	1800	U	1800	1800
105-60-2	Caprolactam	1800	U	1800	1800
86-74-8	Carbazole	1800	U	1800	1800
218-01-9	Chrysene	1800	U	1800	1800
84-74-2	Di-n-butyl phthalate	1800	U	1800	1800
117-84-0	Di-n-octyl phthalate	1800	U	1800	1800
53-70-3	Dibenz(a,h)anthracene	1800	U	1800	1800
132-64-9	Dibenzofuran	1800	U	1800	1800
84-66-2	Diethyl phthalate	1800	U	1800	1800
131-11-3	Dimethyl phthalate	1800	U	1800	1800
206-44-0	Fluoranthene	1800	U	1800	1800
86-73-7	Fluorene	1800	U	1800	1800
118-74-1	Hexachlorobenzene	1800	U	1800	1800
87-68-3	Hexachlorobutadiene	1800	U	1800	1800
77-47-4	Hexachlorocyclopentadiene	1800	U	1800	1800
67-72-1	Hexachloroethane	1800	U	1800	1800
193-39-5	Indeno[1,2,3-cd]pyrene	1800	U	1800	1800
78-59-1	Isophorone	1800	U	1800	1800
621-64-7	N-Nitrosodi-n-propylamine	1800	U	1800	1800
86-30-6	N-Nitrosodiphenylamine	1800	U	1800	1800
91-20-3	Naphthalene	1800	U	1800	1800
98-95-3	Nitrobenzene	1800	U	1800	1800
87-86-5	Pentachlorophenol	9500	U	9500	9500
85-01-8	Phenanthrene	1800	U	1800	1800
108-95-2	Phenol	1800	U	1800	1800
129-00-0	Pyrene	1800	U	1800	1800

UM 021608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah — Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD04-1207 — Lab Sample ID: 680-32635-2

Matrix: Solid — Lab File ID: t4339.d

Analysis Method: OLM04.3/SV — Date Received: 12/12/2007 09:23

Sample wt/vol: 30.05 (g) — Date Extracted: 12/12/2007 13:28

Level: (low/med) Low — Date Analyzed: 01/03/2008 16:18

Conc. Extract Vol.: 10 (mL) — Dilution Factor: 1

Injection Volume: — Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y — % Moisture: 64.2

Analy. Batch No.: 95134 — Units: ug/Kg

Number TICs Found: 23 — TIC Total: 42520

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.15	21000	A B,B2
74[illegible]3-85-7	Cyclopropane, nonyl-	6.93	630	N
	Unknown	7.72	410	
	Unknown	7.82	1900	
	Unknown	7.94	570	
	Unknown	8.01	710	
	Unknown	8.03	480	
2[illegible]8-7	Cyclopentadecane	9.26	430	N
	Unknown	9.32	480	
	Unknown	9.58	1300	
	Unknown	10.66	370	
	Unknown	10.88	3100	
6[illegible]7-0	Docosane	11.84	570	N
	Unknown	12.21	370	
6[illegible]8-7	Heptadecane	12.62	450	N
	Unknown	13.13	550	
	Unknown	13.58	1500	
	Unknown	13.85	2000	
8[illegible]7-6	.gamma.-Sitosterol	14.24	970	N
	Unknown	14.35	1500	
	Unknown	14.59	1200	
1[illegible]-70-5	Lup-20(29)-en-3-one	14.82	1600	N
	Unknown	14.93	430	

WM 021608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD05-1207 | Lab Sample ID: 680-32635-4

Matrix: Solid | Lab File ID: t4340.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.13 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 16:40

Conc. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 63.6

Analy. Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1800	U	1800	1800
108-60-1	2,2'-oxybis[1-chloropropane]	1800	U	1800	1800
95-95-4	2,4,5-Trichlorophenol	1800	U	1800	1800
88-06-2	2,4,6-Trichlorophenol	1800	U	1800	1800
120-83-2	2,4-Dichlorophenol	1800	U	1800	1800
105-67-9	2,4-Dimethylphenol	1800	U	1800	1800
51-28-5	2,4-Dinitrophenol	9300	U	9300	9300
121-14-2	2,4-Dinitrotoluene	1800	U	1800	1800
606-20-2	2,6-Dinitrotoluene	1800	U	1800	1800
91-58-7	2-Chloronaphthalene	1800	U	1800	1800
95-57-8	2-Chlorophenol	1800	U	1800	1800
91-57-6	2-Methylnaphthalene	1800	U	1800	1800
95-48-7	2-Methylphenol	1800	U	1800	1800
88-74-4	2-Nitroaniline	9300	U	9300	9300
88-75-5	2-Nitrophenol	1800	U	1800	1800
91-94-1	3,3'-Dichlorobenzidine	1800	U	1800	1800
99-09-2	3-Nitroaniline	9300	U	9300	9300
534-52-1	4,6-Dinitro-2-methylphenol	9300	U	9300	9300
101-55-3	4-Bromophenyl phenyl ether	1800	U	1800	1800
59-50-7	4-Chloro-3-methylphenol	1800	U	1800	1800
106-47-8	4-Chloroaniline	3600	U	3600	3600
7005-72-3	4-Chlorophenyl phenyl ether	1800	U	1800	1800
106-44-5	4-Methylphenol	1800	U	1800	1800
100-01-6	4-Nitroaniline	9300	U	9300	9300
100-02-7	4-Nitrophenol	9300	U	9300	9300
83-32-9	Acenaphthene	1800	U	1800	1800
208-96-8	Acenaphthylene	1800	U	1800	1800
98-86-2	Acetophenone	1800	U	1800	1800
120-12-7	Anthracene	1800	U	1800	1800
1912-24-9	Atrazine	1800	U	1800	1800
100-52-7	Benzaldehyde	1800	U	1800	1800
56-55-3	Benzo[a]anthracene	1800	U	1800	1800
50-32-8	Benzo[a]pyrene	1800	U	1800	1800
205-99-2	Benzo[b]fluoranthene	1800	U	1800	1800
191-24-2	Benzo[g,h,i]perylene	1800	U	1800	1800

021608

FORM I

GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD05-1207 | Lab Sample ID: 680-32635-4

Matrix: Solid | Lab File ID: t4340.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.13 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 16:40

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 63.6

Analyt. Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1800	U	1800	1800
111-91-1	Bis(2-chloroethoxy)methane	1800	U	1800	1800
111-44-4	Bis(2-chloroethyl)ether	1800	U	1800	1800
117-81-7	Bis(2-ethylhexyl) phthalate	1800	U	1800	1800
85-68-7	Butyl benzyl phthalate	1800	U	1800	1800
105-60-2	Caprolactam	1800	U	1800	1800
86-74-8	Carbazole	1800	U	1800	1800
218-01-9	Chrysene	1800	U	1800	1800
84-74-2	Di-n-butyl phthalate	1800	U	1800	1800
117-84-0	Di-n-octyl phthalate	1800	U	1800	1800
53-70-3	Dibenz(a,h)anthracene	1800	U	1800	1800
132-64-9	Dibenzofuran	1800	U	1800	1800
84-66-2	Diethyl phthalate	1800	U	1800	1800
131-11-3	Dimethyl phthalate	1800	U	1800	1800
206-44-0	Fluoranthene	1800	U	1800	1800
86-73-7	Fluorene	1800	U	1800	1800
118-74-1	Hexachlorobenzene	1800	U	1800	1800
87-68-3	Hexachlorobutadiene	1800	U	1800	1800
77-47-4	Hexachlorocyclopentadiene	1800	U	1800	1800
67-72-1	Hexachloroethane	1800	U	1800	1800
193-39-5	Indeno[1,2,3-cd]pyrene	1800	U	1800	1800
78-59-1	Isophorone	1800	U	1800	1800
621-64-7	N-Nitrosodi-n-propylamine	1800	U	1800	1800
86-30-6	N-Nitrosodiphenylamine	1800	U	1800	1800
91-20-3	Naphthalene	1800	U	1800	1800
98-95-3	Nitrobenzene	1800	U	1800	1800
87-86-5	Pentachlorophenol	9300	U	9300	9300
85-01-8	Phenanthrene	1800	U	1800	1800
108-95-2	Phenol	1800	U	1800	1800
129-00-0	Pyrene	1800	U	1800	1800

UM 02/14/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YBKG-SD05-1207 | Lab Sample ID: 680-32635-4

Matrix: Solid | Lab File ID: t4340.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.13 (g) | Date Extracted: 12/12/2007 13:28

Level (low/med) Low | Date Analyzed: 01/03/2008 16:40

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 63.6

Analysis Batch No.: 95134 | Units: ug/Kg

Number TICs Found: 14 | TIC Total: 29740

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.15	17000	~~A~~ B,B2
7460[illegible]-85-7	Cyclopropane, nonyl-	6.93	660	N
2[illegible]-2	Cyclododecane	7.81	1400	N
11[illegible]-1	Oleic Acid	9.43	610	N
	Unknown Organic Acid	9.57	3400	
123-[illegible]-5	Octadecanoic acid, butyl ester	10.22	1500	N
	Unknown	10.89	610	
0-[illegible]	2-Methyloctadecane	11.84	380	N
	Unknown	13.58	630	
	Unknown	13.85	890	
	Unknown	14.24	1100	
	Unknown	14.34	660	
	Unknown	14.59	380	
	Unknown	14.82	520	

LM 02/16/08

FORM I

GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 | Lab Sample ID: 680-32635-6

Matrix: Solid | Lab File ID: t4341.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.07 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 17:01

Conc. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 66.3

Analysis Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	2000	U	2000	2000
108-60-1	2,2'-oxybis[1-chloropropane]	2000	U	2000	2000
95-95-4	2,4,5-Trichlorophenol	2000	U	2000	2000
88-06-2	2,4,6-Trichlorophenol	2000	U	2000	2000
120-83-2	2,4-Dichlorophenol	2000	U	2000	2000
105-67-9	2,4-Dimethylphenol	2000	U	2000	2000
51-28-5	2,4-Dinitrophenol	10000	U	10000	10000
121-14-2	2,4-Dinitrotoluene	2000	U	2000	2000
606-20-2	2,6-Dinitrotoluene	2000	U	2000	2000
91-58-7	2-Chloronaphthalene	2000	U	2000	2000
95-57-8	2-Chlorophenol	2000	U	2000	2000
91-57-6	2-Methylnaphthalene	2000	U	2000	2000
95-48-7	2-Methylphenol	2000	U	2000	2000
88-74-4	2-Nitroaniline	10000	U	10000	10000
88-75-5	2-Nitrophenol	2000	U	2000	2000
91-94-1	3,3'-Dichlorobenzidine	2000	U	2000	2000
99-09-2	3-Nitroaniline	10000	U	10000	10000
534-52-1	4,6-Dinitro-2-methylphenol	10000	U	10000	10000
101-55-3	4-Bromophenyl phenyl ether	2000	U	2000	2000
59-50-7	4-Chloro-3-methylphenol	2000	U	2000	2000
106-47-8	4-Chloroaniline	3900	U	3900	3900
7005-72-3	4-Chlorophenyl phenyl ether	2000	U	2000	2000
106-44-5	4-Methylphenol	2000	U	2000	2000
100-01-6	4-Nitroaniline	10000	U	10000	10000
100-02-7	4-Nitrophenol	10000	U	10000	10000
83-32-9	Acenaphthene	2000	U	2000	2000
208-96-8	Acenaphthylene	2000	U	2000	2000
98-86-2	Acetophenone	2000	U	2000	2000
120-12-7	Anthracene	2000	U	2000	2000
1912-24-9	Atrazine	2000	U	2000	2000
100-52-7	Benzaldehyde	2000	U	2000	2000
56-55-3	Benzo[a]anthracene	2000	U	2000	2000
50-32-8	Benzo[a]pyrene	2000	U	2000	2000
205-99-2	Benzo[b]fluoranthene	2000	U	2000	2000
191-24-2	Benzo[g,h,i]perylene	2000	U	2000	2000

UM 01608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 | Lab Sample ID: 680-32635-6

Matrix: Solid | Lab File ID: t4341.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.07 (g) | Date Extracted: 12/12/2007 13:28

Level (low/med) Low | Date Analyzed: 01/03/2008 17:01

Conc. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 66.3

Analysis Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	2000	U	2000	2000
111-91-1	Bis(2-chloroethoxy)methane	2000	U	2000	2000
111-44-4	Bis(2-chloroethyl)ether	2000	U	2000	2000
117-81-7	Bis(2-ethylhexyl) phthalate	2000	U	2000	2000
[illegible]	Butyl benzyl phthalate	2000	U	2000	2000
[illegible]	Caprolactam	2000	U	2000	2000
[illegible]	Carbazole	2000	U	2000	2000
[illegible]	Chrysene	2000	U	2000	2000
[illegible]	Di-n-butyl phthalate	2000	U	2000	2000
[illegible]	Di-n-octyl phthalate	2000	U	2000	2000
[illegible]	Dibenz(a,h)anthracene	2000	U	2000	2000
[illegible]	Dibenzofuran	2000	U	2000	2000
[illegible]	Diethyl phthalate	2000	U	2000	2000
[illegible]	Dimethyl phthalate	2000	U	2000	2000
[illegible]	Fluoranthene	2000	U	2000	2000
[illegible]	Fluorene	2000	U	2000	2000
[illegible]	Hexachlorobenzene	2000	U	2000	2000
[illegible]	Hexachlorobutadiene	2000	U	2000	2000
[illegible]	Hexachlorocyclopentadiene	2000	U	2000	2000
[illegible]	Hexachloroethane	2000	U	2000	2000
[illegible]	Indeno[1,2,3-cd]pyrene	2000	U	2000	2000
[illegible]	Isophorone	2000	U	2000	2000
[illegible]	N-Nitrosodi-n-propylamine	2000	U	2000	2000
[illegible]	N-Nitrosodiphenylamine	2000	U	2000	2000
[illegible]	Naphthalene	2000	U	2000	2000
[illegible]	Nitrobenzene	2000	U	2000	2000
[illegible]	Pentachlorophenol	10000	U	10000	10000
[illegible]	Phenanthrene	2000	U	2000	2000
[illegible]	Phenol	2000	U	2000	2000
[illegible]	Pyrene	2000	U	2000	2000

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 | Lab Sample ID: 680-32635-6

Matrix: Solid | Lab File ID: t4341.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.07 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 17:01

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 66.3

Analysis Batch No.: 95134 | Units: ug/Kg

Number TICs Found: 26 | TIC Total: 53370

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.15	~~24000~~	A ~~B,BL~~
74663-85-7	Cyclopropane, nonyl-	6.93	770	N
	Unknown	7.81	1900	
	Unknown	9.58	2700	
	Unknown	10.22	810	
	Unknown	10.56	480	
629-78-7	Heptadecane	10.58	820	N
	Unknown	10.66	520	
	Unknown	10.87	2200	
646-31-1	Tetracosane	11.50	450	N
	Unknown	11.59	500	
630-03-5	Nonacosane	11.84	1000	N
	Unknown	12.21	630	
629-78-7	Heptadecane	12.62	800	N
[illegible]	Cholesterol	13.12	1000	N
[illegible]-0	Epicholestanol	13.19	490	N
	Unknown	13.34	520	
	Unknown	13.57	2000	
	Unknown	13.70	560	
	Unknown	13.85	2800	
	Unknown	14.24	1800	
	Unknown Organic Acid	14.30	700	
	Unknown	14.35	2200	
	Unknown	14.58	1500	
[illegible]-26-3	D:C-Friedoolean-8-en-3-one	14.82	1700	N
	Unknown	14.91	520	

UM 02/608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 MS | Lab Sample ID: 680-32635-6 MS

Matrix: Solid | Lab File ID: t4342.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.29 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 17:23

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 66.3

Analy. Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1900	U	1900	1900
108-60-1	2,2'-oxybis[1-chloropropane]	1900	U	1900	1900
95-95-4	2,4,5-Trichlorophenol	1900	U	1900	1900
88-06-2	2,4,6-Trichlorophenol	1900	U	1900	1900
120-83-2	2,4-Dichlorophenol	1900	U	1900	1900
105-67-9	2,4-Dimethylphenol	1900	U	1900	1900
51-28-5	2,4-Dinitrophenol	10000	U	10000	10000
121-14-2	2,4-Dinitrotoluene	5000		1900	1900
606-20-2	2,6-Dinitrotoluene	1900	U	1900	1900
91-58-7	2-Chloronaphthalene	1900	U	1900	1900
95-57-8	2-Chlorophenol	4500		1900	1900
91-57-6	2-Methylnaphthalene	1900	U	1900	1900
95-48-7	2-Methylphenol	1900	U	1900	1900
88-74-4	2-Nitroaniline	10000	U	10000	10000
88-75-5	2-Nitrophenol	1900	U	1900	1900
91-94-1	3,3'-Dichlorobenzidine	1900	U	1900	1900
99-09-2	3-Nitroaniline	10000	U	10000	10000
534-52-1	4,6-Dinitro-2-methylphenol	10000	U	10000	10000
101-55-3	4-Bromophenyl phenyl ether	1900	U	1900	1900
59-50-7	4-Chloro-3-methylphenol	5900		1900	1900
106-47-8	4-Chloroaniline	3900	U	3900	3900
7005-72-3	4-Chlorophenyl phenyl ether	1900	U	1900	1900
106-44-5	4-Methylphenol	1900	U	1900	1900
100-01-6	4-Nitroaniline	10000	U	10000	10000
100-02-7	4-Nitrophenol	10000	U	10000	10000
83-32-9	Acenaphthene	3800		1900	1900
208-96-8	Acenaphthylene	1900	U	1900	1900
98-86-2	Acetophenone	1900	U	1900	1900
120-12-7	Anthracene	1900	U	1900	1900
1912-24-9	Atrazine	1900	U	1900	1900
100-52-7	Benzaldehyde	1900	U	1900	1900
56-55-3	Benzo[a]anthracene	1900	U	1900	1900
50-32-8	Benzo[a]pyrene	1900	U	1900	1900
205-99-2	Benzo[b]fluoranthene	1900	U	1900	1900
191-24-2	Benzo[g,h,i]perylene	1900	U	1900	1900

VK 02/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 MS | Lab Sample ID: 680-32635-6 MS

Matrix: Solid | Lab File ID: t4342.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.29 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 17:23

Conc. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 66.3

Analy. Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
[illegible]-9	Benzo[k]fluoranthene	1900	U	1900	1900
[illegible]-1	Bis(2-chloroethoxy)methane	1900	U	1900	1900
[illegible]-4	Bis(2-chloroethyl)ether	1900	U	1900	1900
[illegible]81-7	Bis(2-ethylhexyl) phthalate	1900	U	1900	1900
85-68-7	Butyl benzyl phthalate	1900	U	1900	1900
105-60-2	Caprolactam	1900	U	1900	1900
[illegible]-74-8	Carbazole	1900	U	1900	1900
[illegible]	Chrysene	1900	U	1900	1900
[illegible]	Di-n-butyl phthalate	1900	U	1900	1900
[illegible]	Di-n-octyl phthalate	1900	U	1900	1900
[illegible]	Dibenz(a,h)anthracene	1900	U	1900	1900
[illegible]-64-9	Dibenzofuran	1900	U	1900	1900
[illegible]4-66-2	Diethyl phthalate	1900	U	1900	1900
[illegible]-11-3	Dimethyl phthalate	1900	U	1900	1900
[illegible]-44-0	Fluoranthene	1900	U	1900	1900
[illegible]	Fluorene	1900	U	1900	1900
[illegible]	Hexachlorobenzene	1900	U	1900	1900
[illegible]	Hexachlorobutadiene	1900	U	1900	1900
[illegible]	Hexachlorocyclopentadiene	1900	U	1900	1900
[illegible]	Hexachloroethane	1900	U	1900	1900
[illegible]	Indeno[1,2,3-cd]pyrene	1900	U	1900	1900
[illegible]	Isophorone	1900	U	1900	1900
[illegible]	N-Nitrosodi-n-propylamine	3100		1900	1900
[illegible]	N-Nitrosodiphenylamine	1900	U	1900	1900
[illegible]	Naphthalene	1900	U	1900	1900
[illegible]	Nitrobenzene	1900	U	1900	1900
[illegible]	Pentachlorophenol	10000	U	10000	10000
[illegible]	Phenanthrene	1900	U	1900	1900
[illegible]	Phenol	4500		1900	1900
[illegible]	Pyrene	4700		1900	1900

FORM I

GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 MSD | Lab Sample ID: 680-32635-6 MSD

Matrix: Solid | Lab File ID: t4343.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.21 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 17:44

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 66.3

Analy. Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1900	U	1900	1900
108-60-1	2,2'-oxybis[1-chloropropane]	1900	U	1900	1900
95-95-4	2,4,5-Trichlorophenol	1900	U	1900	1900
88-06-2	2,4,6-Trichlorophenol	1900	U	1900	1900
[illegible]-83-2	2,4-Dichlorophenol	1900	U	1900	1900
[illegible]-67-9	2,4-Dimethylphenol	1900	U	1900	1900
51-28-5	2,4-Dinitrophenol	10000	U	10000	10000
[illegible]-14-2	2,4-Dinitrotoluene	7100		1900	1900
[illegible]-20-2	2,6-Dinitrotoluene	1900	U	1900	1900
91-58-7	2-Chloronaphthalene	1900	U	1900	1900
[illegible]-57-8	2-Chlorophenol	4800		1900	1900
[illegible]-57-6	2-Methylnaphthalene	1900	U	1900	1900
[illegible]-48-7	2-Methylphenol	1900	U	1900	1900
[illegible]-4-4	2-Nitroaniline	10000	U	10000	10000
[illegible]	2-Nitrophenol	1900	U	1900	1900
[illegible]-1	3,3'-Dichlorobenzidine	1900	U	1900	1900
[illegible]-09-2	3-Nitroaniline	10000	U	10000	10000
[illegible]-52-1	4,6-Dinitro-2-methylphenol	10000	U	10000	10000
[illegible]-55-3	4-Bromophenyl phenyl ether	1900	U	1900	1900
[illegible]	4-Chloro-3-methylphenol	6100		1900	1900
[illegible]-6	4-Chloroaniline	3900	U	3900	3900
[illegible]	4-Chlorophenyl phenyl ether	1900	U	1900	1900
[illegible]-5	4-Methylphenol	1900	U	1900	1900
[illegible]-6	4-Nitroaniline	10000	U	10000	10000
[illegible]-7	4-Nitrophenol	10000	U	10000	10000
[illegible]	Acenaphthene	3500		1900	1900
[illegible]	Acenaphthylene	1900	U	1900	1900
[illegible]	Acetophenone	1900	U	1900	1900
[illegible]	Anthracene	1900	U	1900	1900
[illegible]	Atrazine	1900	U	1900	1900
[illegible]	Benzaldehyde	1900	U	1900	1900
[illegible]	Benzo[a]anthracene	1900	U	1900	1900
[illegible]	Benzo[a]pyrene	1900	U	1900	1900
[illegible]	Benzo[b]fluoranthene	1900	U	1900	1900
[illegible]-24-2	Benzo[g,h,i]perylene	1900	U	1900	1900

MB 21608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Testamerica Savannah | Job No.: 680-32610-2

SDG No.: YORK16

Client Sample ID: YS08-SD01-1207 MSD | Lab Sample ID: 680-32635-6 MSD

Matrix: Solid | Lab File ID: t4343.d

Analysis Method: OLM04.3/SV | Date Received: 12/12/2007 09:23

Sample wt/vol: 30.21 (g) | Date Extracted: 12/12/2007 13:28

Level: (low/med) Low | Date Analyzed: 01/03/2008 17:44

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) Y | % Moisture: 66.3

Analy. Batch No.: 95134 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1900	U	1900	1900
111-91-1	Bis(2-chloroethoxy)methane	1900	U	1900	1900
111-44-4	Bis(2-chloroethyl)ether	1900	U	1900	1900
117-81-7	Bis(2-ethylhexyl) phthalate	1900	U	1900	1900
85-68-7	Butyl benzyl phthalate	1900	U	1900	1900
105-60-2	Caprolactam	1900	U	1900	1900
86-74-8	Carbazole	1900	U	1900	1900
218-01-9	Chrysene	1900	U	1900	1900
84-74-2	Di-n-butyl phthalate	1900	U	1900	1900
117-84-0	Di-n-octyl phthalate	1900	U	1900	1900
53-70-3	Dibenz(a,h)anthracene	1900	U	1900	1900
132-64-9	Dibenzofuran	1900	U	1900	1900
84-66-2	Diethyl phthalate	1900	U	1900	1900
131-11-3	Dimethyl phthalate	1900	U	1900	1900
206-44-0	Fluoranthene	1900	U	1900	1900
86-73-7	Fluorene	1900	U	1900	1900
118-74-1	Hexachlorobenzene	1900	U	1900	1900
87-68-3	Hexachlorobutadiene	1900	U	1900	1900
77-47-4	Hexachlorocyclopentadiene	1900	U	1900	1900
67-72-1	Hexachloroethane	1900	U	1900	1900
193-39-5	Indeno[1,2,3-cd]pyrene	1900	U	1900	1900
78-59-1	Isophorone	1900	U	1900	1900
621-64-7	N-Nitrosodi-n-propylamine	3400		1900	1900
86-30-6	N-Nitrosodiphenylamine	1900	U	1900	1900
91-20-3	Naphthalene	1900	U	1900	1900
98-95-3	Nitrobenzene	1900	U	1900	1900
87-86-5	Pentachlorophenol	10000	U	10000	10000
85-01-8	Phenanthrene	1900	U	1900	1900
108-95-2	Phenol	4800		1900	1900
129-00-0	Pyrene	4200		1900	1900

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SD01-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

Matrix (soil/water): SOIL Lab Sample ID: 734811

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 42.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.9			P
7429-90-5	Aluminum	12500			P
7440-36-0	Antimony	0.84	~~J~~	B N BL	P
7440-38-2	Arsenic	14.8			P
7440-39-3	Barium	30.7	J		P
7440-41-7	Beryllium	0.92	J		P
7440-70-2	Calcium	1810			P
7440-43-9	Cadmium	0.28	~~J~~	B BL	P
7440-48-4	Cobalt	7.3	J		P
7440-47-3	Chromium	33.3			P
7440-50-8	Copper	12.7			P
7439-89-6	Iron	27700			P
7439-95-4	Magnesium	5320			P
7439-97-6	Mercury	0.15	~~J~~	L UL	CV
7439-96-5	Manganese	122		K ~~N~~ MSH	P
7440-23-5	Sodium	8900			P
7440-02-0	Nickel	13.7			P
7439-92-1	Lead	22.9		J E SD	P
7440-09-7	Potassium	3860			P
7782-49-2	Selenium	6.5	U		P
7440-28-0	Thallium	4.6	~~U~~	UL BL	P
7440-62-2	Vanadium	39.8			P
7440-66-6	Zinc	77.6			P
57-12-5	Cyanide	5.0	~~U~~	UL ~~N~~ MSL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SD01P-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

Matrix (soil/water): SOIL Lab Sample ID: 734812

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 46.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	6.9			P
7429-90-5	Aluminum	8640			P
7440-36-0	Antimony	0.84	~~J~~	B N BL	P
7440-38-2	Arsenic	7.1			P
7440-39-3	Barium	20.7	J		P
7440-41-7	Beryllium	0.65	J		P
7440-70-2	Calcium	2250			P
7440-43-9	Cadmium	0.39	~~J~~	B BL	P
7440-48-4	Cobalt	5.4	J		P
7440-47-3	Chromium	21.2			P
7440-50-8	Copper	11.1			P
7439-89-6	Iron	18400			P
7439-95-4	Magnesium	4330			P
7439-97-6	Mercury	0.27			CV
7439-96-5	Manganese	104		K N MSH	P
7440-23-5	Sodium	8400			P
7440-02-0	Nickel	10.2			P
7439-92-1	Lead	21.3		J E SD	P
7440-09-7	Potassium	2380			P
7782-49-2	Selenium	5.4	U		P
7440-28-0	Thallium	3.8	~~U~~	UL BL	P
7440-62-2	Vanadium	30.2			P
7440-66-6	Zinc	77.6			P
57-12-5	Cyanide	4.7	~~U~~	UL N MSL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SD04-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

Matrix (soil/water): SOIL Lab Sample ID: 734949

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 36.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.77	J		P
7429-90-5	Aluminum	17900			P
7440-36-0	Antimony	12.5	~~U~~	L ~~N~~ MSL	P
7440-38-2	Arsenic	12.9			P
7440-39-3	Barium	38.0	J		P
7440-41-7	Beryllium	1.1			P
7440-70-2	Calcium	2370			P
7440-43-9	Cadmium	0.33	~~J~~	B BL	P
7440-48-4	Cobalt	8.1	J		P
7440-47-3	Chromium	38.9			P
7440-50-8	Copper	16.4			P
7439-89-6	Iron	37200			P
7439-95-4	Magnesium	6800			P
7439-97-6	Mercury	0.10	~~J~~	L BL	CV
7439-96-5	Manganese	476		K ~~N~~ MSH	P
7440-23-5	Sodium	11400			P
7440-02-0	Nickel	16.6			P
7439-92-1	Lead	27.7		J ~~E~~ SD	P
7440-09-7	Potassium	3830			P
7782-49-2	Selenium	7.3	U		P
7440-28-0	Thallium	5.2	~~U~~	UL BL	P
7440-62-2	Vanadium	46.2			P
7440-66-6	Zinc	114			P
57-12-5	Cyanide	5.7	~~U~~	UL ~~N~~ MSL	AS

JAC 22408

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SD05-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

Matrix (soil/water): SOIL Lab Sample ID: 734950

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 36.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.94	J		P
7429-90-5	Aluminum	17600			P
7440-36-0	Antimony	0.72	~~J~~	B ~~N~~ BL	P
7440-38-2	Arsenic	14.5			P
7440-39-3	Barium	38.4	J		P
7440-41-7	Beryllium	1.1			P
7440-70-2	Calcium	2550			P
7440-43-9	Cadmium	0.39	~~J~~	B BL	P
7440-48-4	Cobalt	7.8	J		P
7440-47-3	Chromium	38.6			P
7440-50-8	Copper	16.8			P
7439-89-6	Iron	37100			P
7439-95-4	Magnesium	6620			P
7439-97-6	Mercury	0.096	~~J~~	L BL	CV
7439-96-5	Manganese	496		K ~~N~~ MBH	P
7440-23-5	Sodium	10800			P
7440-02-0	Nickel	16.4			P
7439-92-1	Lead	29.2		J ~~E~~ SD	P
7440-09-7	Potassium	3750			P
7782-49-2	Selenium	7.3	U		P
7440-28-0	Thallium	5.2	~~U~~	UL BL	P
7440-62-2	Vanadium	47.8			P
7440-66-6	Zinc	109			P
57-12-5	Cyanide	6.4	~~U~~	UL ~~N~~ MSL	AS

JAC 22408

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

USEPA CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SD01-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

Matrix (soil/water): SOIL Lab Sample ID: 734951

Level (low/med): LOW Date Received: 12/12/2007

% Solids: 34.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.0	J		P
7429-90-5	Aluminum	19000			P
7440-36-0	Antimony	1.5	~~J~~	B ~~N~~ BL	P
7440-38-2	Arsenic	9.0			P
7440-39-3	Barium	36.7	J		P
7440-41-7	Beryllium	1.0	J		P
7440-70-2	Calcium	2250			P
7440-43-9	Cadmium	0.32	~~J~~	B BL	P
7440-48-4	Cobalt	7.2	J		P
7440-47-3	Chromium	41.3			P
7440-50-8	Copper	18.7			P
7439-89-6	Iron	28500			P
7439-95-4	Magnesium	7150			P
7439-97-6	Mercury	0.12	~~J~~	L BL	CV
7439-96-5	Manganese	213		K ~~N~~ MSH	P
7440-23-5	Sodium	12600			P
7440-02-0	Nickel	17.1			P
7439-92-1	Lead	31.2		J ~~E~~ SD	P
7440-09-7	Potassium	3980			P
7782-49-2	Selenium	7.9	U		P
7440-28-0	Thallium	5.6	~~U~~	UL BL	P
7440-62-2	Vanadium	50.8			P
7440-66-6	Zinc	108			P
57-12-5	Cyanide	6.0	~~U~~	UL ~~N~~ MSL	AS

JBC 22408

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SD03-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

Matrix (soil/water): SOIL Lab Sample ID: 734809

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 22.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.27	J		P
7429-90-5	Aluminum	16500			P
7440-36-0	Antimony	2.4	~~J~~	B ~~N~~ BL	P
7440-38-2	Arsenic	10.3			P
7440-39-3	Barium	30.7	J		P
7440-41-7	Beryllium	0.85	J		P
7440-70-2	Calcium	2620			P
7440-43-9	Cadmium	0.52	~~J~~	B BL	P
7440-48-4	Cobalt	7.6	J		P
7440-47-3	Chromium	33.6			P
7440-50-8	Copper	17.4			P
7439-89-6	Iron	32400			P
7439-95-4	Magnesium	6640			P
7439-97-6	Mercury	0.073	J	L BL	CV
7439-96-5	Manganese	284		K ~~N~~ MBH	P
7440-23-5	Sodium	15400			P
7440-02-0	Nickel	15.9			P
7439-92-1	Lead	35.5		J ~~E~~ SD	P
7440-09-7	Potassium	3860			P
7782-49-2	Selenium	11.0	U		P
7440-28-0	Thallium	7.8	~~U~~	UL BL	P
7440-62-2	Vanadium	45.2			P
7440-66-6	Zinc	97.5			P
57-12-5	Cyanide	11.0	~~U~~	UL ~~N~~ MSL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SD01-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

Matrix (soil/water): SOIL Lab Sample ID: 734810

Level (low/med): LOW Date Received: 12/11/2007

% Solids: 34.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.2	J		P
7429-90-5	Aluminum	18500			P
7440-36-0	Antimony	1.7	~~J~~	B ~~N~~ BL	P
7440-38-2	Arsenic	13.0			P
7440-39-3	Barium	38.7	J		P
7440-41-7	Beryllium	1.1	J		P
7440-70-2	Calcium	2630			P
7440-43-9	Cadmium	0.51	~~J~~	B BL	P
7440-48-4	Cobalt	8.2	J		P
7440-47-3	Chromium	39.6			P
7440-50-8	Copper	17.8			P
7439-89-6	Iron	38100			P
7439-95-4	Magnesium	7180			P
7439-97-6	Mercury	0.11	~~J~~	L BL	CV
7439-96-5	Manganese	368		K ~~N~~ MSH	P
7440-23-5	Sodium	11900			P
7440-02-0	Nickel	17.3			P
7439-92-1	Lead	27.9		J ~~E~~ SD	P
7440-09-7	Potassium	4080			P
7782-49-2	Selenium	7.7	U		P
7440-28-0	Thallium	5.5	~~U~~	UL BL	P
7440-62-2	Vanadium	48.3			P
7440-66-6	Zinc	119			P
57-12-5	Cyanide	5.9	~~U~~	UL ~~N~~ MBL	AS

JLC 52408

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS22-SD03-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK16

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 734809

% Solids: 22.0

Date Received: 12/11/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U UL	MSL	0.0030	12/28/2007	22:08	PBSEM121507A
SW6010B	Cadmium	ND	umole/g	U UL	BL	0.00098	12/28/2007	22:08	PBSEM121507A
SW6010B	Copper	ND	umole/g	U UL	BL	0.0083	12/28/2007	22:08	PBSEM121507A
SW6010B	Nickel	0.027	umole/g	B		0.0073	12/28/2007	22:08	PBSEM121507A
SW6010B	Lead	0.062	umole/g	B	BL	0.0041	12/28/2007	22:08	PBSEM121507A
SW6010B	Zinc	0.86	umole/g			0.0017	12/28/2007	22:08	PBSEM121507A
SW7470A	Mercury	ND	umole/g	U R	MSL	0.00055	12/27/2007	13:55	PBSEMHG121507
AVS	Acid Volatile Sulfide	9.6	umole/g			2.1	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	0.099							

JMC 3/24/08

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YSA14-SD01-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK16

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 734810

% Solids: 34.0

Date Received: 12/11/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.0049	umole/g	~~B~~ B	BL	0.0019	12/28/2007	22:12	PBSEM121507A
SW6010B	Cadmium	0.0012	umole/g	~~B~~ L	BL	0.00060	12/28/2007	22:12	PBSEM121507A
SW6010B	Copper	0.063	umole/g	~~B~~ L	MSL	0.0054	12/28/2007	22:12	PBSEM121507A
SW6010B	Nickel	0.048	umole/g	~~B~~		0.0046	12/28/2007	22:12	PBSEM121507A
SW6010B	Lead	0.071	umole/g	L	MSL	0.0026	12/28/2007	22:12	PBSEM121507A
SW6010B	Zinc	1.0	umole/g			0.0010	12/28/2007	22:12	PBSEM121507A
SW7470A	Mercury	ND	umole/g	~~U~~ R	MSL	0.00033	12/27/2007	13:57	PBSEMHG121507
AVS	Acid Volatile Sulfide	1.7	umole/g			1.3	12/16/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	0.71							

AC 22408

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YBKG-SD01-1207

Lab Name: TAL BURLINGTON | Contract: 27000

Lab Code: STLVT | Case No.: 27000 | SDG No.: YORK16

Matrix: SEDIMENT | Client: SUBR7 | Lab Sample ID: 734811

% Solids: 42.0 | Date Received: 12/11/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.037	umole/g	B ~~B~~	~~BL~~	0.0017	12/28/2007	22:16	PBSEM121507A
SW6010B	Cadmium	0.0018	umole/g	B L	LL	0.00052	12/28/2007	22:16	PBSEM121507A
SW6010B	Copper	0.066	umole/g	B L	MSL	0.0046	12/28/2007	22:16	PBSEM121507A
SW6010B	Nickel	0.060	umole/g	B		0.0041	12/28/2007	22:16	PBSEM121507A
SW6010B	Lead	0.067	umole/g	L	MSL	0.0023	12/28/2007	22:16	PBSEM121507A
SW6010B	Zinc	0.76	umole/g			0.00090	12/28/2007	22:16	PBSEM121507A
SW7470A	Mercury	ND	umole/g	U R	MSL	0.00029	12/27/2007	13:59	PBSEMHG121507
AVS	Acid Volatile Sulfide	3.5	umole/g			1.2	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	0.29							

X 16 0M

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YBKG-SD01P-1207

Lab Name: TAL BURLINGTON | Contract: 27000

Lab Code: STLVT | Case No.: 27000 | SDG No.: YORK16

Matrix: SEDIMENT | Client: SUBR7 | Lab Sample ID: 734812

% Solids: 46.0 | Date Received: 12/11/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.036	umole/g	B L	MSL	0.0014	12/28/2007	22:19	PBSEM121507A
SW6010B	Cadmium	ND	umole/g	U UL	RL	0.00044	12/28/2007	22:19	PBSEM121507A
SW6010B	Copper	0.069	umole/g	B UL	MSL	0.0039	12/28/2007	22:19	PBSEM121507A
SW6010B	Nickel	0.055	umole/g	B		0.0034	12/28/2007	22:19	PBSEM121507A
SW6010B	Lead	0.069	umole/g	L	MSL	0.0019	12/28/2007	22:19	PBSEM121507A
SW6010B	Zinc	0.71	umole/g			0.00076	12/28/2007	22:19	PBSEM121507A
SW7470A	Mercury	ND	umole/g	U R	MSL	0.00024	12/27/2007	14:01	PBSEMHG121507
AVS	Acid Volatile Sulfide	3.7	umole/g			0.98	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	0.26							

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YBKG-SD04-1207

Lab Name: TAL BURLINGTON | Contract: 27000

Lab Code: STLVT | Case No.: 27000 | SDG No.: YORK16

Matrix: SEDIMENT | Client: SUBR7 | Lab Sample ID: 734949

% Solids: 36.0 | Date Received: 12/12/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.0072	umole/g	~~B~~ B	BL	0.0019	12/28/2007	22:22	PBSEM121507A
SW6010B	Cadmium	ND	umole/g	~~U~~ UL	BL	0.00060	12/28/2007	22:22	PBSEM121507A
SW6010B	Copper	0.079	umole/g	~~B~~ L	MSL	0.0064	12/28/2007	22:22	PBSEM121507A
SW6010B	Nickel	0.078	umole/g	~~B~~		0.0046	12/28/2007	22:22	PBSEM121507A
SW6010B	Lead	0.086	umole/g	L	MSL	0.0026	12/28/2007	22:22	PBSEM121507A
SW6010B	Zinc	0.96	umole/g			0.0010	12/28/2007	22:22	PBSEM121507A
SW7470A	Mercury	ND	umole/g	~~U~~ R	MSL	0.00033	01/10/2008	11:34	PBSEMHG121507
AVS	Acid Volatile Sulfide	8.7	umole/g			1.3	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	0.14							

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YBKG-SD05-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK16

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 734950

% Solids: 36.0

Date Received: 12/12/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.0034	umole/g	~~B~~ P	BL	0.0019	12/28/2007	22:25	PBSEM121507A
SW6010B	Cadmium	0.00074	umole/g	~~B~~ L	BL	0.00069	12/28/2007	22:25	PBSEM121507A
SW6010B	Copper	0.086	umole/g	~~B~~ L	MSL	0.0062	12/28/2007	22:25	PBSEM121507A
SW6010B	Nickel	0.056	umole/g	~~B~~		0.0044	12/28/2007	22:25	PBSEM121507A
SW6010B	Lead	0.080	umole/g	L	MSL	0.0026	12/28/2007	22:25	PBSEM121507A
SW6010B	Zinc	0.89	umole/g			0.0010	12/28/2007	22:25	PBSEM121507A
SW7470A	Mercury	ND	umole/g	U R	MSL	0.00033	01/10/2008	11:36	PBSEMHG121507
AVS	Acid Volatile Sulfide	2.6	umole/g			1.3	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	0.42							

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS08-SD01-1207

Lab Name: TAL BURLINGTON | Contract: 27000

Lab Code: STLVT | Case No.: 27000 | SDG No.: YORK16

Matrix: SEDIMENT | Client: SUBR7 | Lab Sample ID: 734951

% Solids: 34.0 | Date Received: 12/12/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U UL	MSL	0.0020	12/28/2007	22:29	PBSEM121507A
SW6010B	Cadmium	ND	umole/g	U UL	BL	0.00065	12/28/2007	22:29	PBSEM121507A
SW6010B	Copper	0.071	umole/g	B L	MSL	0.0067	12/28/2007	22:29	PBSEM121507A
SW6010B	Nickel	0.058	umole/g	B		0.0049	12/28/2007	22:29	PBSEM121507A
SW6010B	Lead	0.10	umole/g	L	MSL	0.0028	12/28/2007	22:29	PBSEM121507A
SW6010B	Zinc	0.88	umole/g			0.0011	12/28/2007	22:29	PBSEM121507A
SW7470A	Mercury	ND	umole/g	U R	MSL	0.00036	01/10/2008	11:38	PBSEMHG121507
AVS	Acid Volatile Sulfide	6.5	umole/g			1.5	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	0.17							

JKC 2/14/08

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

393.8

TestAmerica Burlington

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK16

Matrix: (soil/water) SOLID Lab Sample ID:C7L130347 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g
Work Order: KD4TE1AC
Dilution factor: 1
Moisture %:78

Date Received: 12/12/07
Date Extracted:12/18/07
Date Analyzed: 01/07/08

QC Batch: 7352087

Client Sample Id: YS22-SD03-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	7.7	U
319-84-6	alpha-BHC	7.7	U
319-85-7	beta-BHC	7.7	U
319-86-8	delta-BHC	7.7	U
58-89-9	gamma-BHC (Lindane)	7.7	U
5103-71-9	alpha-Chlordane	7.7	U
5103-74-2	gamma-Chlordane	7.7	U
72-54-8	4,4'-DDD	15	U
72-55-9	4,4'-DDE	15	U
50-29-3	4,4'-DDT	15	U
60-57-1	Dieldrin	15	U
959-98-8	Endosulfan I	7.7	U
33213-65-9	Endosulfan II	15	U
1031-07-8	Endosulfan sulfate	15	U
72-20-8	Endrin	15	U
7421-93-4	Endrin aldehyde	15	U
53494-70-5	Endrin ketone	15	U
76-44-8	Heptachlor	7.7	U
1024-57-3	Heptachlor epoxide	7.7	U
72-43-5	Methoxychlor	77	U
12674-11-2	Aroclor 1016	150	U
11104-28-2	Aroclor 1221	300	U
11141-16-5	Aroclor 1232	150	U
53469-21-9	Aroclor 1242	150	U
12672-29-6	Aroclor 1248	150	U
11097-69-1	Aroclor 1254	150	U
11096-82-5	Aroclor 1260	150	U
8001-35-2	Toxaphene	770	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK16

Matrix: (soil/water) SOLID Lab Sample ID:C7L130347 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30.2 / g Date Received: 12/12/07
Work Order: KD4TQ1AC Date Extracted:12/18/07
Dilution factor: 0.99 Date Analyzed: 01/07/08
Moisture %:66

QC Batch: 7352087

Client Sample Id: YSA14-SD01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	5.0	U
319-84-6	alpha-BHC	5.0	U
319-85-7	beta-BHC	5.0	U
319-86-8	delta-BHC	5.0	U
58-89-9	gamma-BHC (Lindane)	5.0	U
5103-71-9	alpha-Chlordane	5.0	U
5103-74-2	gamma-Chlordane	5.0	U
72-54-8	4,4'-DDD	9.6	U
72-55-9	4,4'-DDE	9.6	U
50-29-3	4,4'-DDT	9.6	U
60-57-1	Dieldrin	9.6	U
959-98-8	Endosulfan I	5.0	U
33213-65-9	Endosulfan II	9.6	U
1031-07-8	Endosulfan sulfate	9.6	U
72-20-8	Endrin	9.6	U
7421-93-4	Endrin aldehyde	9.6	U
53494-70-5	Endrin ketone	9.6	U
76-44-8	Heptachlor	5.0	U
1024-57-3	Heptachlor epoxide	5.0	U
72-43-5	Methoxychlor	50	U
12674-11-2	Aroclor 1016	96	U
11104-28-2	Aroclor 1221	200	U
11141-16-5	Aroclor 1232	96	U
53469-21-9	Aroclor 1242	96	U
12672-29-6	Aroclor 1248	96	U
11097-69-1	Aroclor 1254	96	U
11096-82-5	Aroclor 1260	96	U
8001-35-2	Toxaphene	500	U

JLC 32408

FORM I

TestAmerica Burlington

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK16

Matrix: (soil/water) SOLID Lab Sample ID: C7L130347 003
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g
Work Order: KD4TT1AC
Dilution factor: 1
Moisture %: 58

Date Received: 12/12/07
Date Extracted: 12/18/07
Date Analyzed: 01/07/08

QC Batch: 7352087

Client Sample Id: YBKG-SD01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.0	U
319-84-6	alpha-BHC	4.0	U
319-85-7	beta-BHC	4.0	U
319-86-8	delta-BHC	4.0	U
58-89-9	gamma-BHC (Lindane)	4.0	U
5103-71-9	alpha-Chlordane	4.0	U
5103-74-2	gamma-Chlordane	4.0	U
72-54-8	4,4'-DDD	7.9	U
72-55-9	4,4'-DDE	7.9	U
50-29-3	4,4'-DDT	7.9	U
60-57-1	Dieldrin	7.9	U
959-98-8	Endosulfan I	4.0	U
33213-65-9	Endosulfan II	7.9	U
1031-07-8	Endosulfan sulfate	7.9	U
72-20-8	Endrin	7.9	U
7421-93-4	Endrin aldehyde	7.9	U
53494-70-5	Endrin ketone	7.9	U
76-44-8	Heptachlor	4.0	U
1024-57-3	Heptachlor epoxide	4.0	U
72-43-5	Methoxychlor	40	U
12674-11-2	Aroclor 1016	79	U
11104-28-2	Aroclor 1221	160	U
11141-16-5	Aroclor 1232	79	U
53469-21-9	Aroclor 1242	79	U
12672-29-6	Aroclor 1248	79	U
11097-69-1	Aroclor 1254	79	U
11096-82-5	Aroclor 1260	79	U
8001-35-2	Toxaphene	400	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK16

Matrix: (soil/water) SOLID Lab Sample ID:C7L130347 004
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30.1 / g
Work Order: KD4T21AC
Dilution factor: 1
Moisture %:54

Date Received: 12/12/07
Date Extracted:12/18/07
Date Analyzed: 01/08/08

QC Batch: 7352087

Client Sample Id: YBKG-SD01P-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	3.7	U
319-84-6	alpha-BHC	3.7	U
319-85-7	beta-BHC	3.7	U
319-86-8	delta-BHC	3.7	U
58-89-9	gamma-BHC (Lindane)	3.7	U
5103-71-9	alpha-Chlordane	3.7	U
5103-74-2	gamma-Chlordane	3.7	U
72-54-8	4,4'-DDD	7.2	U
72-55-9	4,4'-DDE	7.2	U
50-29-3	4,4'-DDT	7.2	U
60-57-1	Dieldrin	7.2	U
959-98-8	Endosulfan I	3.7	U
33213-65-9	Endosulfan II	7.2	U
1031-07-8	Endosulfan sulfate	7.2	U
72-20-8	Endrin	7.2	U
7421-93-4	Endrin aldehyde	7.2	U
53494-70-5	Endrin ketone	7.2	U
76-44-8	Heptachlor	3.7	U
1024-57-3	Heptachlor epoxide	3.7	U
72-43-5	Methoxychlor	37	U
12674-11-2	Aroclor 1016	72	U
11104-28-2	Aroclor 1221	150	U
11141-16-5	Aroclor 1232	72	U
53469-21-9	Aroclor 1242	72	U
12672-29-6	Aroclor 1248	72	U
11097-69-1	Aroclor 1254	72	U
11096-82-5	Aroclor 1260	72	U
8001-35-2	Toxaphene	370	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK16

Matrix: (soil/water) SOLID Lab Sample ID:C7L130347 005
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30.2 / g
Work Order: KD4T41AC
Dilution factor: 0.99
Moisture %:64

Date Received: 12/13/07
Date Extracted:12/18/07
Date Analyzed: 01/08/08

QC Batch: 7352087

Client Sample Id: YBKG-SD04-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.7	U
319-84-6	alpha-BHC	4.7	U
319-85-7	beta-BHC	4.7	U
319-86-8	delta-BHC	4.7	U
58-89-9	gamma-BHC (Lindane)	4.7	U
5103-71-9	alpha-Chlordane	4.7	U
5103-74-2	gamma-Chlordane	4.7	U
72-54-8	4,4'-DDD	9.1	U
72-55-9	4,4'-DDE	9.1	U
50-29-3	4,4'-DDT	9.1	U
60-57-1	Dieldrin	9.1	U
959-98-8	Endosulfan I	4.7	U
33213-65-9	Endosulfan II	9.1	U
1031-07-8	Endosulfan sulfate	9.1	U
72-20-8	Endrin	9.1	U
7421-93-4	Endrin aldehyde	9.1	U
53494-70-5	Endrin ketone	9.1	U
76-44-8	Heptachlor	4.7	U
1024-57-3	Heptachlor epoxide	4.7	U
72-43-5	Methoxychlor	47	U
12674-11-2	Aroclor 1016	91	U
11104-28-2	Aroclor 1221	180	U
11141-16-5	Aroclor 1232	91	U
53469-21-9	Aroclor 1242	91	U
12672-29-6	Aroclor 1248	91	U
11097-69-1	Aroclor 1254	91	U
11096-82-5	Aroclor 1260	91	U
8001-35-2	Toxaphene	470	U

FORM I

TestAmerica Burlington

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK16

Matrix: (soil/water) SOLID Lab Sample ID:C7L130347 006
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g
Work Order: KD4T71AC
Dilution factor: 1
Moisture %:64

Date Received: 12/13/07
Date Extracted:12/18/07
Date Analyzed: 01/08/08

QC Batch: 7352087

Client Sample Id: YBKG-SD05-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.7	U
319-84-6	alpha-BHC	4.7	U
319-85-7	beta-BHC	4.7	U
319-86-8	delta-BHC	4.7	U
58-89-9	gamma-BHC (Lindane)	4.7	U
5103-71-9	alpha-Chlordane	4.7	U
5103-74-2	gamma-Chlordane	4.7	U
72-54-8	4,4'-DDD	9.2	U
72-55-9	4,4'-DDE	9.2	U
50-29-3	4,4'-DDT	9.2	U
60-57-1	Dieldrin	9.2	U
959-98-8	Endosulfan I	4.7	U
33213-65-9	Endosulfan II	9.2	U
1031-07-8	Endosulfan sulfate	9.2	U
72-20-8	Endrin	9.2	U
7421-93-4	Endrin aldehyde	9.2	U
53494-70-5	Endrin ketone	9.2	U
76-44-8	Heptachlor	4.7	U
1024-57-3	Heptachlor epoxide	4.7	U
72-43-5	Methoxychlor	47	U
12674-11-2	Aroclor 1016	92	U
11104-28-2	Aroclor 1221	190	U
11141-16-5	Aroclor 1232	92	U
53469-21-9	Aroclor 1242	92	U
12672-29-6	Aroclor 1248	92	U
11097-69-1	Aroclor 1254	92	U
11096-82-5	Aroclor 1260	92	U
8001-35-2	Toxaphene	470	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK16

Matrix: (soil/water) SOLID Lab Sample ID:C7L130347 007
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g
Work Order: KD4VA1AE
Dilution factor: 1
Moisture %:66

Date Received: 12/13/07
Date Extracted:12/18/07
Date Analyzed: 01/08/08

QC Batch: 7352087

Client Sample Id: YS08-SD01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	5.0	U
319-84-6	alpha-BHC	5.0	U
319-85-7	beta-BHC	5.0	U
319-86-8	delta-BHC	5.0	U
58-89-9	gamma-BHC (Lindane)	5.0	U
5103-71-9	alpha-Chlordane	5.0	U
5103-74-2	gamma-Chlordane	5.0	U
72-54-8	4,4'-DDD	9.7	U
72-55-9	4,4'-DDE	9.7	U
50-29-3	4,4'-DDT	9.7	U
60-57-1	Dieldrin	9.7	U
959-98-8	Endosulfan I	5.0	U
33213-65-9	Endosulfan II	9.7	U
1031-07-8	Endosulfan sulfate	9.7	U
72-20-8	Endrin	9.7	U
7421-93-4	Endrin aldehyde	9.7	U
53494-70-5	Endrin ketone	9.7	U
76-44-8	Heptachlor	5.0	U
1024-57-3	Heptachlor epoxide	5.0	U
72-43-5	Methoxychlor	50	U
12674-11-2	Aroclor 1016	97	U
11104-28-2	Aroclor 1221	200	U
11141-16-5	Aroclor 1232	97	U
53469-21-9	Aroclor 1242	97	U
12672-29-6	Aroclor 1248	97	U
11097-69-1	Aroclor 1254	97	U
11096-82-5	Aroclor 1260	97	U
8001-35-2	Toxaphene	500	U

FORM I

TestAmerica Burlington
MATRIX SPIKE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK16

Matrix: (soil/water) SOLID Lab Sample ID:C7L130347 007
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g
Work Order: KD4VA1AF
Dilution factor: 1
Moisture %:66

Date Received: 12/13/07
Date Extracted:12/18/07
Date Analyzed: 01/08/08

QC Batch: 7352087

Client Sample Id: YS08-SD01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	30.0	
58-89-9	gamma-BHC (Lindane)	9.22	a
50-29-3	4,4'-DDT	17.3	a
60-57-1	Dieldrin	61.4	
72-20-8	Endrin	68.8	
76-44-8	Heptachlor	30.1	

FORM I

TestAmerica Burlington
MATRIX SPIKE DUPLICATE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK16

Matrix: (soil/water) SOLID Lab Sample ID:C7L130347 007
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g
Work Order: KD4VA1AG
Dilution factor: 1
Moisture %:66

Date Received: 12/13/07
Date Extracted:12/18/07
Date Analyzed: 01/08/08

QC Batch: 7352087

Client Sample Id: YS08-SD01-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	28.8	
58-89-9	gamma-BHC (Lindane)	7.96	a
50-29-3	4,4'-DDT	14.3	a
60-57-1	Dieldrin	59.9	
72-20-8	Endrin	66.3	
76-44-8	Heptachlor	29.6	

FORM I

TestAmerica Burlington

Client Sample ID: YS22-SD03-1207

HPLC

Lot-Sample #...: G7L120264-001 Work Order #...: KD1E31AD Matrix.....: SOLID
Date Sampled...: 12/10/07 Date Received..: 12/12/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353502
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	88	(81 - 127)

TestAmerica Burlington

Client Sample ID: YSA14-SD01-1207

HPLC

Lot-Sample #...: G7L120264-002 Work Order #...: KD1FD1AD Matrix.....: SOLID
Date Sampled...: 12/10/07 Date Received..: 12/12/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353502
Dilution Factor: 0.99
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	93	(81 - 127)

JJC 2/24/08

TestAmerica Burlington

Client Sample ID: YBKG-SD01-1207

HPLC

Lot-Sample #...: G7L120264-003	**Work Order #...:** KD1FK1AD	**Matrix.....:** SOLID
Date Sampled...: 12/10/07	**Date Received..:** 12/12/07	
Prep Date.....: 12/19/07	**Analysis Date..:** 12/23/07	
Prep Batch #...: 7353502		
Dilution Factor: 1		
% Moisture.....:	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(81 - 127)

JC 22408

TestAmerica Burlington

Client Sample ID: YBKG-SD01P-1207

HPLC

Lot-Sample #...: G7L120264-004 Work Order #...: KD1FP1AD Matrix.....: SOLID
Date Sampled...: 12/10/07 Date Received..: 12/12/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353502
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(81 - 127)

JJC 12/26/08

TestAmerica Burlington

Client Sample ID: YBKG-SD04-1207

HPLC

Lot-Sample #...: G7L120264-005 Work Order #...: KD5FR1AD Matrix.....: SOLID
Date Sampled...: 12/13/07 Date Received..: 12/13/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353502
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(81 - 127)

TestAmerica Burlington

Client Sample ID: YKBG-SD05-1207

HPLC

Lot-Sample #...: G7L120264-006 Work Order #...: KD5FT1AD Matrix.....: SOLID
Date Sampled...: 12/13/07 Date Received..: 12/13/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353502
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(81 - 127)

JLC 12/28/08

TestAmerica Burlington

Client Sample ID: YS08-SD01-1207

HPLC

Lot-Sample #...: G7L120264-007 Work Order #...: KD5FV1AD Matrix.....: SOLID
Date Sampled...: 12/11/07 Date Received..: 12/13/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353502
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	92	(81 - 127)

TestAmerica Burlington

Client Sample ID: YS22-SD03-1207

HPLC

Lot-Sample #...: G7L120264-001 Work Order #...: KD1E31AC Matrix.....: SOLID
Date Sampled...: 12/10/07 Date Received..: 12/12/07
Prep Date.....: 12/19/07 Analysis Date..: 01/02/08
Prep Batch #...: 7353503
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YSA14-SD01-1207

HPLC

Lot-Sample #...: G7L120264-002	Work Order #...: KD1FD1AC	Matrix.....: SOLID
Date Sampled...: 12/10/07	Date Received..: 12/12/07	
Prep Date.....: 12/19/07	Analysis Date..: 01/02/08	
Prep Batch #...: 7353503		
Dilution Factor: 1		
% Moisture.....:	Method.....: SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YBKG-SD01-1207

HPLC

Lot-Sample #...: G7L120264-003 Work Order #...: KD1FK1AC Matrix.....: SOLID
Date Sampled...: 12/10/07 Date Received..: 12/12/07
Prep Date.....: 12/19/07 Analysis Date..: 02/02/08
Prep Batch #...: 7353503
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YBKG-SD01P-1207

HPLC

Lot-Sample #...: G7L120264-004	Work Order #...: KD1FP1AC	Matrix.....: SOLID
Date Sampled...: 12/10/07	Date Received..: 12/12/07	
Prep Date.....: 12/19/07	Analysis Date..: 01/03/08	
Prep Batch #...: 7353503		
Dilution Factor: 1		
% Moisture.....:	Method.....: SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YBKG-SD04-1207

HPLC

Lot-Sample #...:	G7L120264-005	Work Order #...:	KD5FR1AC	Matrix.....:	SOLID
Date Sampled...:	12/13/07	Date Received..:	12/13/07		
Prep Date.....:	12/19/07	Analysis Date..:	01/03/08		
Prep Batch #...:	7353503				
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YKBG-SD05-1207

HPLC

Lot-Sample #...: G7L120264-006	Work Order #...: KD5FT1AC	Matrix.....: SOLID
Date Sampled...: 12/13/07	Date Received..: 12/13/07	
Prep Date.....: 12/19/07	Analysis Date..: 01/03/08	
Prep Batch #...: 7353503		
Dilution Factor: 1		
% Moisture.....:	Method.....: SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YS08-SD01-1207

HPLC

Lot-Sample #...: G7L120264-007	Work Order #...: KD5FV1AC	Matrix.....: SOLID
Date Sampled...: 12/11/07	Date Received..: 12/13/07	
Prep Date.....: 12/19/07	Analysis Date..: 01/03/08	
Prep Batch #...: 7353503		
Dilution Factor: 1		
% Moisture.....:	Method.....: SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

January 24, 2008

Ms. Stacy Davenport
CH2M Hill
15010 Conference Center Drive
Suite 200
Chantilly, VA 20151

Re: Laboratory Project No. 27000
Case: 27000; SDG: YORK16

Dear Ms. Davenport:

Enclosed are the analytical results for the samples that were received by TestAmerica Burlington on December 11th and 12th, 2007. Laboratory identification numbers were assigned, and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 12/11/07 ETR No: 123352		
734809	YS22-SD03-1207	12/10/07	SEDIMENT
734810	YSA14-SD01-1207	12/10/07	SEDIMENT
734811	YBKG-SD01-1207	12/10/07	SEDIMENT
734812	YBKG-SD01P-1207	12/10/07	SEDIMENT
	Received: 12/12/07 ETR No: 123371		
734949	YBKG-SD04-1207	12/11/07	SEDIMENT
734950	YBKG-SD05-1207	12/11/07	SEDIMENT
734951	YS08-SD01-1207	12/11/07	SEDIMENT
734951DP	YS08-SD01-1207REP	12/11/07	SEDIMENT
734951MS	YS08-SD01-1207MS	12/11/07	SEDIMENT
734951MD	YS08-SD01-1207MSD	12/11/07	SEDIMENT

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

The samples in this delivery group were received by TAL Burlington. The containers provided for nitroaromatic and nitroguanadine analyses were forwarded to TAL West Sacramento. Any containers provided for Pesticide/PCB analyses were forwarded to TAL Pittsburgh. Analytical data for those fractions is filed at the end of this submittal in sections titled Subcontract Data.

30 Community Drive, Suite 11 South Burlington, VT 05403 tel 802.660.1990 fax 802.660.1919 www.testamericainc.com

The samples in this delivery group were analyzed for Acid Volatile Sulfides and Simultaneously Extracted Metals (AVS/SEM). Matrix spike and replicate analyses were performed on sample YS08-SD01-1207 and yielded elevated recovery of sulfide and responses outside control criteria for silver, copper, mercury and lead. A serial dilution on this sample exhibited elevated percent difference for copper, and post spike recovery was outside control criteria for lead.

The total metals matrix spike performed on sample YS08-SD01-1207 yielded recoveries of antimony, manganese and cyanide outside control criteria. The post spike recoveries were acceptable, however the serial dilution percent difference was elevated for lead.

Due to the calibration range of the Total Organic Carbon (TOC) analysis and the constraints associated with the establishment of a low concentration calibration point, there is imprecision in the quantitation of results at or near the reporting limit when using a linear regression with all of the calibration points. Therefore, the laboratory used a direct proportion between zero and the relative response of the low calibration standard in deriving results when the response for any one of the determinations for a particular sample was less than that of the low calibration standard.

Any reference within this report to Severn Trent Laboratories, Inc. or STL, should be understood to refer to TestAmerica Laboratories, Inc. (formerly known as Severn Trent Laboratories, Inc.) The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

If there are any questions regarding this submittal, please contact me at 802 660-1990.

Sincerely,

James Madison
Project Manager

Enclosure

[redacted]

Chain of Custody Record

Burlington

CTO 195

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client	Project Manager	Date	Chain of Custody Number
CH2M Hill	Laura Cook	12/10/07	367936
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
5700 Cleveland St Ste 101	757 671 8311		
City / State / Zip Code	**Site Contact**	**Lab Contact**	
Virginia Beach / VA / 23462	David Livingston	Chelsea Burnet	
Project Name and Location (State)	**Carrier/Waybill Number**		
NWS Yorktown			
Contract/Purchase Order/Quote No.			
CTO 195			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Eagle I PCTN Aroclor 5 Lowest	Pest / PCB	Total Metals	Dissolved Metals	Cyanide	Gross Alpha/Beta	MBC on Pest PCB					Special Instructions/ Conditions of Receipt
1522-SW03-1207	12/10/07	1000		X									2	2	1	1	1							
1522-SD03-1207	12/10/07	1010			X													1	1					
1SA14-SW01-1207	12/10/07	1145		X									2	2	1	1	1							
1SA14-SD01-1207	12/10/07	1155			X													1	1					
1SA14-EB01-121007	12/10/07	1230		X									2	2	1	1	1							Equipment Blank
1BG-SW01-1207	12/10/07	1500		X									2	2	1	1	1							
1BG-SD01-1207	12/10/07	1510			X													1	1					
1BG-SW01P-1207	12/10/07	1505		X									2	2	1	1	1							
1BG-SD01P-1207	12/10/07	1515			X													1	1					
																								* 3 coolers

Possible Hazard Identification

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other Per Contract

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	12/10/07	1800	1. Received By: Jack L Astin	12/11/07	0925
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By: COPY - ORIGINAL ON FILE		

Comments

SDG # ~~123~~ 12/11/07 ETR # 123348

YORK15

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

[redacted]

Chain of Custody Record

Burlington

CTO 195

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M Hill	Project Manager: Laura Cook	Date: 12/10/07	Chain of Custody Number: 367936
Address: 5700 Cleveland St Ste 101	Telephone Number (Area Code)/Fax Number: 757 671 8311	Lab Number	Page 1 of 1
City: Virginia Beach; State: VA; Zip Code: 23462	Site Contact: David Livingston	Lab Contact: Chelsea Bennet	
Project Name and Location (State): NWS Yorktown	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.: CTO 195			

Analyses (Attach list if more space is needed): Pest/PCB; Total Metals; Dissolved Metals; Cyanide; Grain Size; AVS/SEM; TPH; Chl Pest Pest

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Pest/PCB	Total Metals	Dissolved Metals	Cyanide	Grain Size	Chl Pest Pest	Special Instructions/ Conditions of Receipt
YS22-SW03-1207	12/10/07	1000		X									2	2	1	1	1		
YS22-SD03-1207	12/10/07	1010			X												1	1	
YSA14-SW01-1207	12/10/07	1145		X									2	2	1	1	1		
YSA14-SD01-1207	12/10/07	1155			X												1	1	
YSA14-EB01-121007	12/10/07	1230		X									2	2	1	1	1		Equipment Blank
YBG-SW01-1207	12/10/07	1500		X									2	2	1	1	1		
YBG-SD01-1207	12/10/07	1510			X												1	1	
YBG-SW01P-1207	12/10/07	1505		X									2	2	1	1	1		
YBG-SD01P-1207	12/10/07	1515			X												1	1	
																			* 3 coolers

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other Per Contract

QC Requirements (Specify)

1. Relinquished By	Date 12/10/07	Time 1800	1. Received By Jack L Astin	Date 12/11/07	Time 0925
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

COPY - ORIGINAL ON FILE

Comments

SDG # ~~123~~ 12/11/07 ETR # 123348

YORK15

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

CASE NARRATIVE
TestAmerica Burlington

SDG# YORK16

Sample Receiving:
TestAmerica Pittsburgh received samples on December 12, and 13, 2007. The coolers were received within the proper temperature range.

The samples listed on the chain of custody with the prefix YBKG were identified as YBG on the sample bottles. These samples were logged in off of the chain of custody.

The client sent a memo listing sample identifications that were incorrectly entered on the chains of custody. All changes were made and the memo is included in the package.

If project specific QC was not required for samples contained in this report and batch QC was completed on these samples, anomalous results will be discussed below.

Pesticides/PCBs:
The matrix spike and matrix spike duplicate recovered outside of the control limits for gamma-BHC and 4,4'-DDT.

General Chemistry:
The total solids were performed at the TestAmerica Savannah laboratory and sent to TestAmerica Pittsburgh for dry weight conversion.

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDGs affected

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: December 12, 2007

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station, CTO-195.

The following sample IDs were listed incorrectly on COCs, and should be corrected in the lab hardcopy report and electronic deliverables as follows:

Correct Sample ID	Incorrect ID on COC	Date Collected	Time Collected
YBKG-SW04-1207	YBG-SW04-1207	12/11/2007	10:20
YBKG-SD04-1207	YBG-SD04-1207	12/11/2007	10:30
YBKG-SW05-1207	YBG-SW05-1207	12/11/2007	11:20
YBKG-SD05-1207	YBG-SD05-1207	12/11/2007	11:30
YBKG-TB01-121107	YBG-TB01-121107	12/11/2007	00:00

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Several analyses were listed incorrectly on the COCs for samples collected on December 11, 2007 and need to be corrected in the lab hardcopy report, and any electronic deliverables. The Sample table below denotes the correct analyses that should be analyzed per sample. Specific corrections to the COCs are noted below the sample table.

Correct Sample ID	Date Collected	Time Collected	VOC 624/8260	SVOC 625/8270	PBCs 608/8082	PCBs 8082	Metals/CN/Hg 6010/7470	Hg 7470/7471	Explosives 8330	Nitroglycerin 8332	Nitroguanadine IAPP	SNNS 3060	Sulfide 376.1	MEE RSK-175	Alkalinity	TOC	DOC	Phosphate	Sulfate	Chloride	Fluoride	Nitrate
YS08-SD01-1207	12/11/2007	13:55	X	X	X	X	X		X	X	X					X		X	X	X		
YS08-EB01-121107	12/11/2007	15:15	X	X	X	X	X	X	X	X	X											
YBKG-SD04-1207	12/11/2007	10:30	X	X	X	X	X		X	X	X					X		X	X	X		
YBKG-SD05-1207	12/11/2007	11:30	X	X	X	X	X		X	X	X					X		X	X	X		

- Samples YS08-SD01-1207, YS08-EB01-121107, YBKG-SD04-1207, YBKG-SD05-1207 should be analyzed for Nitroglycerin 8332 and Nitroguanadine IAPP.

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Intercompany Chain of Custody

SDG/Job Reference YORK16
PO Reference 123352
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/07/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YS22-SD03-1207	734809	SEDIMENT	12/10/2007	1010	X
YSA14-SD01-1207	734810	SEDIMENT	12/10/2007	1155	X
YBKG-SD01-1207	734811	SEDIMENT	12/10/2007	1510	X
YBKG-SD01P-1207	734812	SEDIMENT	12/10/2007	1515	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	12/11/7	1500	[illegible]	12/12/07	1010

Intercompany Chain of Custody

SDG/Job Reference YORK16
PO Reference 123371
Project ID SUBR7
Project Name Yorktown NWS
Due Date 1/8/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YBKG-SD04-1207	734949	SEDIMENT	12/11/2007	1030	X
YBKG-SD05-1207	734950	SEDIMENT	12/11/2007	1130	X
YS08-SD01-1207	734951	SEDIMENT	12/11/2007	1355	X
YS08-SD01-1207MS	734951MS	SEDIMENT	12/11/2007	1355	X
YS08-SD01-1207MSD	734951MD	SEDIMENT	12/11/2007	1355	X

Revised to correct prefix of YS08

Relinquished By:	Date:	Time:	Received By:	Date:	Time:

this CoC used for ID
Correction 02/04/14/07

YORK16

Intercompany Chain of Custody

SDG/Job Reference YORK16
PO Reference 123371
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/08/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YBKG-SD04-1207	734949	SEDIMENT	12/11/2007	1030	X
YBKG-SD05-1207	734950	SEDIMENT	12/11/2007	1130	X
YBKG-SD01-1207	734951	SEDIMENT	12/11/2007	1355	X
YBKG-SD01-1207MS	734951MS	SEDIMENT	12/11/2007	1355	X
YBKG-SD01-1207MSD	734951MD	SEDIMENT	12/11/2007	1355	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	12/12/7	1530		12/13/07	1000

Work Order No.: _____

Condition Upon Receipt Variance Report
TestAmerica Pittsburgh Laboratory

Client: TA Ryan Date: 12/14/07
Project No.: _____ Initiated by: _____
Analysis Requested: _____ RFA/COC: _____
Client Sample Numbers Affected: _____

Condition/Variance (Check all that apply):

1. ☑ Not enough sample received for proper analysis. Received approx. _____
2. ☑ Sample received broken/leaking.
3. ☑ Sample received without proper preservative.
   - ☑ Cooler temperature not within 4°C ± 2°C.
     - Record temperature: _____
     - ☑ pH _____
     - ☑ other: _____
4. ☑ Sample received in improper container.
5. ☑ Sample received without proper paperwork.
6. ☑ Paperwork received without sample.
7. ☑ No sample ID on sample container.
8. ☑ Custody tape disturbed/broken/missing.
9. ☑ Sample splits performed by lab.
10. ☑ Volatile sample received with approximately _____ mm headspace.
11. ☑ Sample ID on container does not match on paperwork. Explain:
12. ☑ All coolers on airbill not received with
13. ☑ Other (explain below):

Notes: See Back

Corrective Action:

☑ Client's Name: _____ Informed verbally on: _____ By: _____

☑ Client's Name: Jim Madison Informed in writing on: 12/14/07 By: [illegible]

☑ Sample(s) processed "as is" See email

☑ Sample(s) on hold until: _____ If released: _____

Sample Control Supervisor Review: _____ Date: _____

Project Management Review: [illegible] Date: 12/14/07

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

TA PT/11-07/96-005/CURVR.DOC

YBKG - SW04 - 1207 - ~~CAC~~ bottles says 1020
CAC says 1030

All bottles say YBG - CAC says
YBKG

Cooler Receipt Form
TestAmerica Pittsburgh

Client: TA Buffalo Project: Yorktown Quote: 77432

Cooler Rec'd & Opened for Temp. Check on: 12/12/07

Coolers Opened and Unpacked on: 12/12/07 By: [illegible] (Signature)

TestAmerica Pittsburgh Lot Number: C7L1 J0387

		Yes	No
1.	Were custody seals on the outside of the cooler?	✓	
	If YES, how many and where? Quantity 1 Location front		
	Were signatures and date correct?	✓	
2.	Were custody papers included inside the cooler?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did you sign the custody papers in the appropriate place?	✓	
5.	Was shippers packing slip attached to this form?	✓	
6.	Were packing materials used?	✓	
	If YES, what type?		
7.	Were the samples chilled? (Record temperatures on reverse side.)	✓	
8.	Were the samples appropriately preserved?	NA	
9.	Were all bottles sealed in separate plastic bags? on 11/13/07	✓	✓
10.	Did all bottles arrive in good condition (unbroken)?	✓	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓	
12.	Did all bottle labels and/or tags agree with custody papers?	✓	
13.	Were correct bottles used for tests indicated?	✓	
14.	Were all VOA vials checked for the presence of air bubbles?	NA	
15.	Was a sufficient amount of sample sent in each bottle?	✓	

16. Samples received by: FEDEX UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies:

Level 2 Review

Was contacted on _____ by _____ to resolve discrepancies.

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	4.9	10
2	4.2	2

Sample	Lot Number**

*Acceptable Temperature Range: 4°C ± 2°C

**Please use an asterisk if bottle lot number was covered by the label

Cooler
The ~~spls~~ rec'd 12/13/07
CO 12/14/

TA PT/Nov-07/96-005/COOL.DOC

Page 2 of 2

Cooler Receipt Form

TestAmerica Pittsburgh

Client: TA Boston Project: Yorktown Quote: 77432

Cooler Rec'd & Opened for Temp. Check on: 12/13/07

Coolers Opened and Unpacked on: 12/13/07 By: [signature]

(Signature)

TestAmerica Pittsburgh Lot Number: C7L130347

		Yes	No
1.	Were custody seals on the outside of the cooler?	✓	
	If YES, how many and where? Quantity 1 Location front		
	Were signatures and date correct?	✓	
2.	Were custody papers included inside the cooler?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did you sign the custody papers in the appropriate place?	✓	
5.	Was shippers packing slip attached to this form?	✓	
6.	Were packing materials used?	✓	
	If YES, what type? Bubble Wrap & Ice packs		
7.	Were the samples chilled? (Record temperatures on reverse side.)	✓	
8.	Were the samples appropriately preserved?	NA	
9.	Were all bottles sealed in separate plastic bags?		✓
10.	Did all bottles arrive in good condition (unbroken)?	✓	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓	
12.	Did all bottle labels and/or tags agree with custody papers?	✓	
13.	Were correct bottles used for tests indicated?	✓	
14.	Were all VOA vials checked for the presence of air bubbles?	NA	
15.	Was a sufficient amount of sample sent in each bottle?	✓	

16. Samples received by: (FEDEX) UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies:

Level 2 Review

Was contacted on _____ by _____ to resolve discrepancies.

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved

UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	5.4	5
2	5.7	2

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

Case Narrative

TestAmerica West Sacramento Project Number G7L120264

SOLID, 8330, Nitroaromatics & Nitramines
Sample(s): 7
Manual integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure, Acceptable Manual Integration Practices, SOP No.: S-Q-004, including Addendum 1. The matrix spike duplicate on sample 7 required manual integration for 1,3-Dinitrotoluene, Tetryl, Nitrobenzene, and 3,5-Dinitrotoluene. In addition, the Standard Level 1 on the Cyano confirmation ICAL for 3,5-Dinitrotoluene and 3-Nitrotoluene required manual integration.

There were no other anomalies associated with this project.

Intercompany Chain of Custody

SDG/Job Reference YORK16
PO Reference 123352
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/07/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
YS22-SD03-1207	734809	SEDIMENT	12/10/2007	1010	X	X
YSA14-SD01-1207	734810	SEDIMENT	12/10/2007	1155	X	X
YBKG-SD01-1207	734811	SEDIMENT	12/10/2007	1510	X	X
YBKG-SD01P-1207	734812	SEDIMENT	12/10/2007	1515	X	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	12/11/7	1515	[illegible]	12/12/07	1130

Intercompany Chain of Custody

SDG/Job Reference YORK18
PO Reference 123371
Project ID SUBR7
Project Name Yorktown NWS
Due Date 1/8/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
YBKG-SD04-1207	734949	SEDIMENT	12/11/2007	1030	X	X
YBKG-SD05-1207	734950	SEDIMENT	12/11/2007	1130	X	X
YS08-SD01-1207	734951	SEDIMENT	12/11/2007	1355	X	X
YS08-SD01-1207MS	734951MS	SEDIMENT	12/11/2007	1355	X	X
YS08-SD01-1207MSD	734951MD	SEDIMENT	12/11/2007	1355	X	X

Revised to correct prefix of "YS08"

- labeled YBG-SD04/SD05-1207 - EV 12/13/07

Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Intercompany Chain of Custody

SDG/Job Reference YORK16
PO Reference 123371
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/08/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
YBKG-SD04-1207	734949	SEDIMENT	12/11/2007	1030	X	X
YBKG-SD05-1207	734950	SEDIMENT	12/11/2007	1130	X	X
YBKG-SD01-1207	734951	SEDIMENT	12/11/2007	1355	X	X
YBKG-SD01-1207MS	734951MS	SEDIMENT	12/11/2007	1355	X	X
YBKG-SD01-1207MSD	734951MD	SEDIMENT	12/11/2007	1355	X	X

Relinquished By	Date	Time	Received By	Date	Time
[signature]	12/12/7	1520	[signature]	12/13/07	1430

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST
TestAmerica West Sacramento

49441

CLIENT TAL- Burlington PM DA LOG # 49410

LOT# (QUANTIMS ID) G7L120264 QUOTE# 77439 LOCATION W21C

DATE RECEIVED 12/12/07 12/13/07 TIME RECEIVED 0900 1310

	Initials	Date
	CV	12/12/07

DELIVERED BY ☑ FEDEX ☐ CA OVERNIGHT ☐ CLIENT ☐ AIRBORNE ☐ GOLDENSTATE ☐ DHL ☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS ☐ TAL COURIER ☐ VALLEY LOGISTICS ☐ MORGAN HILL COURIER ☐ OTHER

CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A

CUSTODY SEAL #(S) Seal

SHIPPPING CONTAINER(S) ☑ TAL ☐ CLIENT ☐ N/A

TEMPERTURE RECORD (IN °C) IR 4 ☐ 5 ☑ ☐ OTHER

COC #(S) na

TEMPERATURE BLANK Observed: Corrected:

SAMPLE TEMPERATURES 2 3 3 3

Observed: 2 3 3 Average: 3 Corrected Average: 3

COLLECTOR'S NAME: ☐ Verified from COC ☑ Not on COC

pH MEASURED ☐ YES ☐ ANOMALY ☑ N/A

LABELED BY.....

LABELS CHECKED BY.....

PEER REVIEW ☑ NA

SHORT HOLD TEST NOTIFICATION

SAMPLE RECEIVING

WETCHEM ☑ N/A

VOA-ENCORES ☑ N/A

☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL ☑ N/A

☑ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES ☐ N/A

☐ CLOUSEAU ☐ TEMPERATURE EXCEEDED (2 °C – 6 °C)*1 ☑ N/A

☐ WET ICE ☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED

Notes:

*1 Acceptable temperature range for State of Wisconsin samples is≤4°C.

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

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TestAmerica West Sacramento

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Bottle Lot Inventory

Lot ID: G7L120264

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOA*																				
VOAh*																				
AGB																				
AGBs																				
250AGB																				
250AGBs																				
250AGBn																				
500AGB																				
____AGJ																				
500AGJ																				
250AGJ																				
125AGJ																				
____CGJ																				
500CGJ																				
250CGJ																				
125CGJ	1	1	1	1	1	1	3													
PJ																				
PJn																				
500PJ																				
500PJn																				
500PJna																				
500PJzn/na																				
250PJ																				
250PJn																				
250PJna																				
250PJzn/na																				
Acetate Tube																				
_____"CT																				
Encore																				
Folder/filter																				
PUF																				
Petri/Filter																				
XAD Trap																				
Ziploc																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

h = hydrochloric acid s = sulfuric acid na = sodium hydroxide n = nitric acid zn = zinc acetate

Number of VOAs with air bubbles present / total number of VOA's

QA-185 5/05 EM

Page 3

LEAVE NO SPACES BLANK. USE "NA" IF NOT APPLICABLE.

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 12/10-11/07
Received Date: 12/11-12/07
Analysis Dates: 12/09-15/07

Cooler Temp: 1.0-2.9°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications required for the initial calibrations. The continuing calibrations exhibited high %Ds which required qualifications to the data, see attached Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method or holding blanks. The QC blanks associated with this SDG were: YS12-TB01-121107 (no positive results), YSA14-TB01-121007 (no positive results) and YBKG-TB01-121107 (no positive results) - trip blanks; YSA12-EB01-121107 (chloroform 2.2J ug/L—no qualifications required) and YSA14-EB01-121007 (no positive results) - equipment blanks; YS21-FB01-121007 (no positive results) - field blank.

Surrogates

No qualifications were required.

Laboratory Control Sample

An LCS was not submitted for this data package.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for YS08-SD01-1207—all criteria were met.

Field Duplicate Sample

A field duplicate was submitted for YBKG-SD01P-1207—no positive results exhibited, no qualifications required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascaro **Date:** 2/15/08

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK16

Lab File ID: MB183 BFB Injection Date: 12/14/07

Instrument ID: MSM5972 BFB Injection Time: 2140

GC Column: DB-624 20M ID: 0.18 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	24.1
75	30.0 - 66.0% of mass 95	49.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	74.4
175	4.0 - 9.0% of mass 174	3.8 (5.1)1
176	93.0 - 101.0% of mass 174	70.6 (94.9)1
177	5.0 - 9.0% of mass 176	4.7 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCVIS;4.3-05	CCVIS;4.3-050	MQ080	12/14/07	2205
02	VLCS01	LCS 680-93670/	MQ081	12/14/07	2236
03	VBLK01	MB 680-93670/2	MQ082	12/14/07	2258
04	YS22-SD03-12	680-32610-B-5	M00687	12/15/07	0031
05	YSA14-SD01-1	680-32610-B-7	M00688	12/15/07	0054
06	YBKG-SD01-12	680-32610-B-11	M00689	12/15/07	0116
07	YBKG-SD01P-1	680-32610-B-13	M00690	12/15/07	0139
08	YBG-SD04-120	680-32635-B-2	M00691	12/15/07	0201
09	YBG-SD05-120	680-32635-B-4	M00692	12/15/07	0224
10	YS08-SD01-12	680-32635-B-6	M00693	12/15/07	0247
11	YS08-SD01-12	680-32635-B-6	M00694	12/15/07	0309
12	YS08-SD01-12	680-32635-B-6	M00695	12/15/07	0332
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK16

Instrument ID: MSM5972 Calibration Date: 12/14/07 Time: 2205

Lab File ID: MQ080 Init. Calib. Date(s): 12/08/07 12/08/07

EPA Sample No.(VSTD050##): CCVIS;4.3-050 Init. Calib. Times: 1906 2036

Heated Purge: (Y/N) N

GC Column: DB-624 ID: 0.18 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	3.623	3.346		-7.6	25.0
Chloromethane	4.357	4.392		0.8	
Vinyl Chloride	3.351	3.263	0.100	-2.6	25.0
Bromomethane	0.681	0.547	0.100	-19.7	25.0
Chloroethane	1.956	1.900		-2.9	
Trichlorofluoromethane	3.350	2.975		-11.2	
1,1-Dichloroethene	1.987	1.966	0.100	-1.1	25.0
Freon 113	4.104	3.977		-3.1	
Acetone	1.732	1.678		-3.1	
Carbon Disulfide	8.422	8.265		-1.9	
Methyl Acetate	1.925	1.916		-0.5	
Methylene Chloride	2.476	2.556		3.2	
trans-1,2-Dichloroethene	2.357	2.404		2.0	
Methyl Tert-Butyl Ether	5.715	6.127		7.2	
1,1-Dichloroethane	4.718	4.749	0.200	0.7	25.0
cis-1,2-Dichloroethene	2.450	2.551		4.1	
1,2-Dichloroethene (total)	4.806	4.955		3.1	
2-Butanone	1.895	1.934		2.1	
Chloroform	4.322	4.414	0.200	2.1	25.0
1,1,1-Trichloroethane	0.497	0.494	0.100	-0.6	25.0
Cyclohexane	0.711	0.747		5.1	25.0
Carbon Tetrachloride	0.338	0.323	0.100	-4.4	25.0
Benzene	1.517	1.648	0.500	8.6	25.0
1,2-Dichloroethane	3.390	3.337	0.100	-1.6	25.0
Trichloroethene	0.345	0.372	0.300	7.8	25.0

All other compounds must meet a minimum RRF of 0.010.

7B
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK16

Instrument ID: MSM5972 Calibration Date: 12/14/07 Time: 2205

Lab File ID: MQ080 Init. Calib. Date(s): 12/08/07 12/08/07

EPA Sample No.(VSTD050##): CCVIS;4.3-050 Init. Calib. Times: 1906 2036

Heated Purge: (Y/N) N

GC Column: DB-624 ID: 0.18 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Methyl Cyclohexane	0.824	0.881		6.9	
1,2-Dichloropropane	0.508	0.548		7.9	
Bromodichloromethane	0.566	0.585	0.200	3.4	25.0
cis-1,3-Dichloropropene	0.794	0.855	0.200	7.7	25.0
4-Methyl-2-Pentanone	0.504	0.522		3.6	
Toluene	1.782	1.939	0.400	8.8	25.0
trans-1,3-Dichloropropene	0.690	0.733	0.100	6.2	25.0
1,1,2-Trichloroethane	0.343	0.377	0.100	9.9	25.0
Tetrachloroethene	0.256	0.267	0.200	4.3	25.0
2-Hexanone	0.460	0.487		5.9	
Dibromochloromethane	0.294	0.303	0.100	3.1	25.0
1,2-Dibromoethane	0.288	0.309		7.3	
Chlorobenzene	0.944	1.012	0.500	7.2	25.0
Ethylbenzene	0.534	0.555	0.100	3.9	25.0
Xylene (total)	0.625	0.656	0.300	5.0	25.0
Styrene	1.003	1.063	0.300	6.0	25.0
Bromoform	0.158	0.154	0.100	-2.5	25.0
Isopropylbenzene	1.685	1.739		3.2	
1,1,2,2-Tetrachloroethane	0.470	0.472	0.300	0.4	25.0
1,3-Dichlorobenzene	0.687	0.711	0.600	3.5	25.0
1,4-Dichlorobenzene	0.696	0.708	0.500	1.7	25.0
1,2-Dichlorobenzene	0.615	0.628	0.400	2.1	25.0
1,2-Dibromo-3-Chloropropane	0.224	0.065		-71.0	J/UJ
1,2,4-Trichlorobenzene	0.355	0.369	0.200	3.9	25.0
1,2-Dichloroethane-d4	2.900	2.895		-0.2	
Toluene-d8	1.341	1.434		6.9	
4-Bromofluorobenzene	0.562	0.579	0.200	3.0	25.0

All other compounds must meet a minimum RRF of 0.010.

Initial Calibration Date: 12/8/2007

RRF and %RSD Calculations:

Compound Name: vinyl chloride
Lab Value: 3.495

Area of Compound	173050
Area of Internal STD	12377
Conc. of Internal STD	50
Conc. of Compound	200
Calculated RRF	3.495

Compound Name: chloromethane
Lab Value: 4.7

RRF of STD 1	4.658
RRF of STD 2	4.180
RRF of STD 3	4.151
RRF of STD 4	4.372
RRF of STD 5	4.426
Calculated % RSD	4.7

Continuing Calibration File ID: 12/14/2007

RRF and %D Calculations:

Compound Name: methylene chloride
Lab Value: 2.556

Area of Compound	35367
Area of Internal STD	13837
Conc. of Internal STD	50
Conc. of Compound	50
Calculated RRF	2.556

Compound Name: 2-butanone
Lab Value: 2.1

Average RRF	1.895
Calibration Check RRF	1.934
Calculated % D	-2.1

SAMPLE CALCULATION

Sample ID: YS08-Sd01-1207MS
Standard ID: 12/14/2007
Compound: chlorobenzene
Concnetration: 160 ug/Kg

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound		73293	
Area of Internal STD		67685	
Conc. of Internal (ng)	250	250	
RRF of Compound		1.012	
Dilution Factor	1	1	
Weight of Sample	NA	5.1	
Volume of Sample	5	NA	
% Moisture	NA	0.337	
Aliquot of methol	NA	NA	
Concentration	#DIV/0!	155.64	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	5.257	5.282	1.005
Standard	5.241	5.259	1.003

CASE NARRATIVE
Volatiles Fraction (OLM04.3)
SDG: YORK16
STL Lab Reference No.: 680-32610-2, 680-32635
Project: Yorktown Sites, CTO 195

I. RECEIPT
No receipt or storage anomalies were noted.

II. HOLDING TIMES
A. Sample Preparation: All holding times were met.
B. Sample Analysis: All holding times were met.

III. METHODS
Preparation: OLM04.3_Vol
Cleanup: None
Analysis: OLM04.3_Vol

IV. PREPARATION
Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All initial and continuing calibration criteria were met for target compounds.

B. Blanks: No target compounds were detected in the method blanks.

C. Surrogates: All surrogates recovered within quality control (QC) limits.

D. Spikes: Laboratory control standards (LCS) were analyzed for quality assurance purposes and all target compounds recovered within quality control (QC) limits.

Client sample 680-32365-6 "YS08-SD01-1207" was the designated matrix spike (MS) and matrix spike duplicate (MSD) and all target compounds recovered within quality control (QC) limits.

E. Samples: No dilutions were required for sample analysis.

F. Internal Standards: Internal standards for all samples were within quality control (QC) limits.

G. Notes: A laboratory storage blank was analyzed with these samples. The raw data for the laboratory storage blank is included in the data package at the end of the Raw Sample Data section.

CLP method OLM04.3 was utilized for this project, however our forms and raw data generated using the target software currently lists CLP 4.2 as the statement of work.

All tentatively identified compounds (TICs) in this sample delivery group are estimated values.

Data Completeness

The data package was received complete and intact. Resubmissions were required, samples weights were not properly recorded on the raw data, the laboratory was contacted and the changes were made to the data. Also, a new case narrative was submitted to discuss the matrix spike and matrix spike duplicate recoveries. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 12/10-11/07
Received Date: 12/11-12/07
Extraction Date: 12/12/07
Analysis Dates: 01/03-07/08

Cooler Temp: 1.0-2.9°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of DFTPP.

No qualifications required for the initial and continuing calibrations.

Internal Standards

All criteria were met with the exception of YS08-SD01-1207MS—no qualifications were required.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method blank. The QC blanks associated with this SDG were: YSA14-EB01-121007 (no positive results) and YSA12-EB01-121107 (no positive results)- equipment blanks; YS21-FB01-121007 (no positive results) - field blank.

The associated QC blanks exhibited contamination for TICs. All B flagged TICs in the field samples are flagged B and crossed out in accordance with the Region III modifications to the National Functional Guidelines.

Surrogates

No qualifications were required.

Laboratory Control Sample

An LCS was not submitted for this data package.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for YS08-SD01-1207—all criteria were met.

Field Duplicate Sample

A field duplicate was submitted for YBKG-SD01P-1207—no positive results exhibited, no qualifications required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer L Maschmeyer **Date:** 3/6/08

Initial Calibration Date: 1/4/2008

RRF and %RSD Calculations:

Compound Name: phenol
Lab Value: 4.482

Area of Compound	2565922
Area of Internal STD	286251
Conc. of Internal STD	40
Conc. of Compound	80
Calculated RRF	4.482

Compound Name: benzo(g,h,I)perylene
Lab Value: 5.0

RRF of STD 1	2.455
RRF of STD 2	2.455
RRF of STD 3	2.181
RRF of STD 4	2.325
RRF of STD 5	2.437
Calculated % RSD	5.02

Continuing Calibration File ID: 1/6/2008

RRF and %D Calculations:

Compound Name: benzo(b)fluoranthene
Lab Value: 2.757

Area of Compound	423599
Area of Internal STD	245866
Conc. of Internal STD	40
Conc. of Compound	25
Calculated RRF	2.757

Compound Name: fluorene
Lab Value: 19.9

Average RRF	2.105
Calibration Check RRF	2.524
Calculated % D	-19.9

SAMPLE CALCULATION

Sample ID: YS22-SD03-1207
Standard ID: 1/6/2008
Compound: phenol-d5
Concnetration: 53000

	Water (ug/L)	Soil (ug/Kg)
Area of Compound		397718
Area of Internal STD		68232
Conc. of Internal (ng)	40	40
RRF of Compound		3.952
Final Volume	1000	1000
Dilution Factor	1	1
GPC Factor	NA	2
Injection Volume	1	2
Weight of Sample	NA	5
Initial Volume of Sample	1000	NA
% Moisture	NA	0.221
Concentration	#DIV/0!	53390.98

	RT of Internal STD	RT of Compound	RRT
Sample	4.508	4.177	0.927
Standard	4.503	4.177	0.928

CASE NARRATIVE
Fraction: SEMI VOLATILES By GC/MS (OLM04.3)
SDG: YORK16
STL Lab Reference No.: 680-32610-2 and 680-32635-1
Project: Yorktown Sites, CTO 195

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.
B. Sample Analysis: All holding times were met.

III. METHODS

Preparation: CLP-OLM04.3
Cleanup: N/A
Analysis: CLP-OLM04.3

IV. PREPARATION

Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All acceptance criteria were met.
The continuing calibration for clock 1t011108 had one analyte, pentachlorophenol, recover between 25% and 40%, which is acceptable according to the CLP-OLM04.3 method.

B. Blanks: All acceptance criteria were met.

C. Surrogates: The laboratory's SOP allows one acid surrogate and/or one base surrogate to be outside acceptance limits. Surrogate terphenyl-d14 recovered outside of quality control limits in samples 680-32610-4,-6 and 680-32635-5RE and the results have been qualified on the Form 2. Sample 680-32635-5 had several surrogates recover outside of control limits. The sample was reextracted outside of holding time and the primary and the secondary results were reported.

D. Samples: All acceptance criteria were met.

E. Internal Standards: All acceptance criteria were met.

F. Spike: The matrix spike / matrix spike duplicate was performed on sample 680-32635-5, and all acceptance criteria were met.

G. Other: Regarding potential differences in values between Form 3s and raw data, please be advised of the following TA Savannah LIMS programming rules:

- Raw results are evaluated <u>without</u> a Lower Limit governor. (Therefore, all hits >0 are presented on raw data.)
- Reported results are evaluated <u>with</u> a Lower Limit governor. (Therefore, only hits >RL presented on LIMS Report/Form 1.)
- %Recovery is calculated using the <u>raw</u> result.
- %RPD is calculated using the <u>reported</u> result.

Due to programming rules, MS/MSD RPDs may be noted as NC, Not Calculated, from the reported result.

DataQual

From: "Page, Abbie" <Abbie.Page@testamericainc.com>
To: "DataQual" <dataqual@charter.net>
Cc: <Chelsea.Bennet@ch2m.com>
Sent: Friday, February 29, 2008 9:00 AM
Subject: RE: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Good Morning,

We will be reissuing the SVOC data packages with revised raw data today; however, the files will be too large for me to e-mail.

Please let me know if both of you require a CD. If sending directly to Laura, I'll need an address. We can ship today for your receipt Monday.

Thank you,
Abbie

From: Page, Abbie
Sent: Tuesday, February 26, 2008 5:54 PM
To: 'DataQual'
Cc: Chelsea.Bennet@ch2m.com
Subject: RE: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195
Importance: High

Hi Laura,

Allow me to offer some feedback directly from our department manager regarding the raw data sample weights:

CLP samples have two prep batches. 1st prep batch is the 3550 extraction of 30g to 10ml, the second batch is the GPC cleanup of 5ml to 0.5ml.

We use the container number from the second prep (GPC) when merging to LIMs to get the correct final results. As a result, target gets populated with the initial volume of 5 from the GPC batch , instead of 30 from the 3550 batch. When the raw data is printed, the initial volume has to be manually changed in target. It looks like the raw data did not get changed before printing.

I have requested that we make the appropriate, manual changes to the raw data for SVOC resubmission of YORK14, YORK16 & YORK18. I will also include a brief summary of the limitations discussed below (with regards to the MS/MSD forms) in the case narratives. Do you feel this will suffice as documentation and address the issues of concern?

Please advise - I'll be glad to follow up as thoroughly as possible to ensure you have what you need.

Regards,
Abbie

From: DataQual [mailto:dataqual@charter.net]
Sent: Sunday, February 24, 2008 4:08 PM

To: Page, Abbie
Cc: Chelsea.Bennet@ch2m.com
Subject: Re: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Dear Abbie,

When comparing the raw data, Form Is and Form IIIs for the MS/MSD pairs in question, the sample weight on the raw data and therefore the final concentration (ug/Kg) on the raw data, are incorrect.

For example in SDG# YORK18, sample YSA14-SD03-1207MS Form I (p.43) sample weight is 30.29g with a 2,4-dinitrotoluene result of 3500 ug/Kg and the raw data (p.343) states a 5g sample weight and a 2,4-dinitrotoluene result of 21000ug/Kg. Also, the Form I for the MS/MSDs do not list the positive results that are below the RL. The Form I and Form IIIs for the MS/MSD pair should reflect actual results used for calculating recoveries whether they are below the RL or not. Otherwise, the results presented on these forms do not appear to make sense. Please submit narratives for SDG#s YORK14, 16 and 18 addressing both the raw data errors and the LIMS programming limitations that cause the MS/MSD form Is and form IIIs to be misleading.

If there are any question please let me know.

Thank you,
Laura

----- Original Message -----
From: Page, Abbie
To: DataQual
Cc: Chelsea.Bennet@ch2m.com
Sent: Friday, February 22, 2008 2:37 PM
Subject: RE: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Regarding our LIMS calculation set-up, I'm hopeful this might clarify a bit further:

Raw results are evaluated without a Lower Limit governor. (Therefore, all hits >0 are presented on raw data.)
Reported results are evaluated with a Lower Limit governor. (Therefore, only hits >RL presented on LIMS Report/Form 1.)
%Recovery is calculated using the raw result.
%RPD is calculated using the reported result.

Does this help? If you'd like me to call and discuss in further detail, I'm happy to do so.

Please let me know how I can help.
Regards,
Abbie

From: DataQual [mailto:dataqual@charter.net]
Sent: Friday, February 22, 2008 2:56 PM
To: Page, Abbie
Cc: Chelsea.Bennet@ch2m.com
Subject: Re: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Dear Abbie,

What is confusing is that there are % recoveries listed for the results that are below the RL--and the concentration for the compound is listed as non-detected, "U". Can you please check into this or explain?

Thank you,

Laura

----- Original Message -----
From: Page, Abbie
To: DataQual
Cc: Chelsea.Bennet@ch2m.com
Sent: Friday, February 22, 2008 12:25 PM
Subject: RE: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Hi Laura,

I've obtained some information regarding the % RPD No Calculation (NC) questions you raised.

Essentially, this NC is reflected appropriately per our IT group's intentions when they programmed our current LIMS system.

As I understand, values less than (<) our Reporting Limit (RL) will appear on the raw data scans, even if we are not evaluating below our RL. The Lab Control Standard *does* calculate %Recovery for values <RL because there are cases where we spike near our RL and/or may recover slightly below RL; however, the same calculation rule intentionally does not apply to the RPD calculation.

If it is helpful, I can add a statement to the narrative to elaborate. Please let me know what additional information I can offer regarding this issue.

Thank you,
Abbie

From: DataQual [mailto:dataqual@charter.net]
Sent: Tuesday, February 19, 2008 12:50 PM
To: Page, Abbie
Cc: Chelsea.Bennet@ch2m.com
Subject: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Dear Abbie,

Though I know you haven't had a chance to get back to me on the e-mail question I sent you earlier on the MS/MSD question below. I just wanted to let you know that after going through more of the SVOA data I have noticed the same MS/MSD question in SDG# YORK14, 16 and 18. Again, it appears to me that concentrations are not being reported on the Form III that are listed in the raw data. If you could just have this checked I would appreciate it. Thank you.

Thanks,
Laura

----- Original Message -----
From: DataQual
To: Page, Abbie
Sent: Friday, February 15, 2008 1:31 PM
Subject: Re: SDG#YORK13 SVOA Yorktown CTO-195

Dear Abbie,

I have another question within the same SDG, I'm sorry that I didn't catch it before sending the previous e-mail. Could you please check the two Form IIIs within the SVOA SDG #YORK13 for pentachlorophenol. It

appears to me that as the form states pentachlorophenol concentration is not reported for YS21-GW06-1207MS and YS22-SW02-1207MSD and the RDP is not calculated for both (p. 79-82). According the raw data it appears that the compound is there, can you please have this double checked.

Thanks so much,
Laura

----- Original Message -----
From: Page, Abbie
To: DataQual
Cc: Chelsea.Bennet@ch2m.com
Sent: Friday, February 15, 2008 12:43 PM
Subject: RE: SDG#YORK13 SVOA Yorktown CTO-195

Hi Laura,

I will look into this and get back to you shortly.

Regards,
Abbie

From: DataQual [mailto:dataqual@charter.net]
Sent: Friday, February 15, 2008 1:05 PM
To: Page, Abbie
Cc: Chelsea.Bennet@ch2m.com
Subject: SDG#YORK13 SVOA Yorktown CTO-195

Dear Ms. Page,

I am providing data validation services for the CH2M HILL Yorktown data. I have a question concerning the SVOA fraction of SDG# YORK13. Sample YSA21-GW04-1207 exhibited non-compliant internal standards, according to the case narrative the sample was re-analyzed. However I am not finding the re-analysis in the data package--no raw data or listing on any of the forms. Can you please check into this and letting me know if I am overlooking anything or resubmit any data or forms that are missing. Please feel free to contact me.

Thank you,
Laura

Laura Maschhoff
DataQual Environmental Services, LLC
5830 Amberway Drive
St. Louis, MO 63128
314-330-1327
dataqual@charter.net

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This SDG contains total and dissolved metals, mercury and cyanide analysis using ILM05.3. Please note that method criteria were used to assess all calibration standards because Region III does not have a validation document for the ILM05.3 SOW. Region III qualification conventions and qualifiers were used.

HOLDING TIMES

Sampling Date: 12/10, 12/11
Received Date: 12/11 & 12/12
Prep. Dates: 12/31 ICP, 12/27 Hg, 12/20 CN
Analysis Dates: 1/8 ICP, 1/3 Hg, 12/20 CN

Cooler temps OK, receipt documentation present. All holding time requirements were met.

CALIBRATIONS

An initial calibration single point calibration was analyzed for ICP metals. Initial calibration curve was analyzed for Hg and CN. All initial calibration criteria were met. Calibration verification criteria were met for all ICV and CCV standards. The ICSAB standards exhibited acceptable recoveries for all analytes. The CRI check standards were analyzed and met method criteria. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the CRDL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the CRQL, result is reported as non-detect at the CRQL.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBLK – positive cont.	antimony	0.785 mg/Kg	3.925 mg/Kg	B
	cadmium	0.047J mg/Kg	0.235 mg/Kg	B
PBLK – negative cont.	thallium	-0.778J ug/L	10X MDL (2.2mg/Kg)	L/UL
ICB/CCB – negative cont.	mercury	-0.054J ug/L	10X MDL (0.11 mg/Kg)	L/UL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB, if less than the analyte CRDL, is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

See validation report for specific samples and qualifications.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MD pair in this SDG exhibited non-compliant recoveries for three analytes. The analytes antimony and cyanide recovered below the QC limits. The analyte lead recovered above the QC limit. The PDS spike was acceptable for all three analytes. The analyte antimony was recovered at 25% and was flagged L/R in all samples. Please note that all positive

results for antimony were flagged B due to blank contamination. One non-detect result was rejected. The analyte cyanide was recovered at 68% and all results were flagged L/UL. The analyte manganese was recovered at 136% and all results were flagged K. All associated LCS samples exhibited acceptable recoveries for all analytes.

SERIAL DILUTIONS

The serial dilution analysis exhibited acceptable %Ds for all analytes.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL.

Sample ID: YBKG-SD01-1207 Duplicate Sample ID: YBKG-SD01P-1207

Analyte	Sample Conc.	Duplicate Conc.	RPD
silver	10.9	6.9	45%
aluminum	12500	8640	37%
arsenic	14.8	7.1	70%
calcium	1810	2250	22%
chromium	33.3	21.2	44%
copper	12.7	11.1	13%
iron	27700	18400	40%
magnesium	5320	4330	21%
manganese	122	104	16%
sodium	8900	8400	6%
nickel	13.7	10.2	29%
lead	22.9	21.3	7%
potassium	3860	2380	47%
vanadium	39.8	30.2	27%
zinc	77.6	77.6	0%

Comments: No qualifications were required.

SAMPLE CALCULATION

EPA SAMPLE ID: YSA14-SD01-1207
COMPOUND: copper
CONCENTRATION: 17.8mg/Kg
%Solids – 34
1.34g to 100 ml
Raw Data result: 81.24 ug/L

81.24 ug/L * 0.100L/1.34g * 1/0.34 = 17.83

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the IDL and the CRDL were qualified as estimated, J by the laboratory.

Reviewer Jacqueline Cleveland **Date:** 2/28/08

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK16

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver	10.000	U	-0.570	J	10.000	U	10.000	U	1.000	U	P
Aluminum	200.000	U	200.000	U	200.000	U	200.000	U	20.000	U	P
Antimony	60.000	U	60.000	U	60.000	U	60.000	U	0.785	J	P
Arsenic	10.000	U	1.953	J NQ	2.219	J NQ	10.000	U	1.000	U	P
Barium	200.000	U	200.000	U	200.000	U	200.000	U	20.000	U	P
Beryllium	5.000	U	5.000	U	5.000	U	5.000	U	-0.021	J NQ	P
Calcium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	500.000	U	P
Cadmium	5.000	U	5.000	U	5.000	U	5.000	U	0.047	J	P
Cobalt	50.000	U	50.000	U	50.000	U	50.000	U	-0.034	J NQ	P
Chromium	0.229	J NQ	10.000	U	0.175	J NQ	10.000	U	0.082	J NQ	P
Copper	-0.765	J NQ	-1.035	J NQ	-1.899	J NQ	-2.366	J NQ	-0.207	J NQ	P
Iron	100.000	U	10.270	J NQ	8.210	J NQ	9.553	J NQ	10.000	U	P
Magnesium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	500.000	U	P
Manganese	15.000	U	15.000	U	0.197	J NQ	0.108	J NQ	0.025	J NQ	P
Sodium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	500.000	U	P
Nickel	40.000	U	-1.262	J	40.000	U	-0.776	J	4.000	U	P
Lead	1.529	J	10.000	U	2.385	J NQ	3.091	J NQ	0.599	J NQ	P
Potassium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	500.000	U	P
Selenium	35.000	U	35.000	U	35.000	U	35.000	U	3.500	U	P
Thallium	25.000	U	-1.641	J	25.000	U	25.000	U	-0.778	J	P
Vanadium	50.000	U	0.791	J NQ	50.000	U	50.000	U	5.000	U	P
Zinc	60.000	U	60.000	U	60.000	U	60.000	U	6.000	U	P

✓ flag as noted in report JAC 22408

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK16

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Manganese	0.107	J NQ	-0.194	J NQ	-0.058	J NQ	15.000	U			P

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK16

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Manganese			-0.104	J NQ	-0.069	J NQ					P

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK16

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	-0.054	J	-0.049	J	0.200	U	-0.087	J	0.400	U	CV

✓ flag as noted in report JAC 2/24/08

USEPA-CLP FORMS

5A-IN

MATRIX SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

YS08-SD01-1207S

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 34.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Silver	75 - 125	18.8383		1.0065	J	21.16	84		P	
Aluminum		23741.0100		19007.6300		0.00	0		NR	
Antimony	75 - 125	11.9996	J	1.4939	J	42.32	25	N	P	L/R
Arsenic	75 - 125	25.6665		9.0323		16.93	98		P	
Barium	75 - 125	776.1320		36.7086	J	846.38	87		P	
Beryllium	75 - 125	21.2653		1.0283	J	21.16	96		P	
Calcium		2321.2020		2249.6630		0.00	0		NR	
Cadmium	75 - 125	19.9302		0.3215	J	21.16	93		P	
Cobalt	75 - 125	204.0203		7.2137	J	211.60	93		P	
Chromium	75 - 125	124.9683		41.3112		84.64	99		P	
Copper	75 - 125	119.8900		18.7068		105.80	96		P	
Iron		30956.4100		28536.1500		0.00	0		NR	
Magnesium		7319.0860		7148.6310		0.00	0		NR	
Mercury	75 - 125	0.7081	J	0.1222	J	0.54	108		CV	
Manganese	75 - 125	501.0580		213.3812		211.60	136	N	P	K+
Sodium		12403.7200		12608.8900		0.00	0		NR	
Nickel	75 - 125	217.0969		17.1262		211.60	95		P	
Lead	75 - 125	39.1028		31.2304		8.46	93		P	
Potassium		4113.4150		3980.6920		0.00	0		NR	
Selenium	75 - 125	16.4981		7.4058	U	21.16	78		P	
Thallium	75 - 125	17.5434		5.2899	U	21.16	83		P	
Vanadium	75 - 125	246.2971		50.8307		211.60	92		P	
Zinc	75 - 125	308.0829		108.3296		211.60	94		P	
Cyanide	75 - 125	8.1888	J	5.9780	U	12.05	68	N	AS	L/UL

JAC 2/28/08

Comments:

213 Revised 2/8/8 JWM

5B-IN
POST-DIGESTION SPIKE SAMPLE RECOVERY

EPA SAMPLE NO lidmethod

YS08-SD01-1207A

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Antimony		119.00		6.65	J	120.0	94		P
Manganese		2578.00		950.40		1900.0	86		P
Cyanide		18.81		10.00	U	20.0	94		AS

Comments:

8-IN

ICP-AES and ICP-MS SERIAL DILUTIONS

EPA SAMPLE NO.

YS08-SD01-1207L

ab Name: TestAmerica Burlington Contract: 27000

ab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK16

atrix (soil/water): SOIL Level (low/med): LOW

oncentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Silver	4.48	J	50.00	U	100		P
Aluminum	84660.00		90900.00		7		P
Antimony	6.65	J	300.00	U	100		P
Arsenic	40.23		46.63	J	16		P
Barium	163.50	J	172.25	J	5		P
Beryllium	4.58	J	5.22	J	14		P
Calcium	10020.00		10700.00	J	7		P
Cadmium	1.43	J	25.00	U	100		P
Cobalt	32.13	J	34.87	J	9		P
Chromium	184.00		199.40		8		P
Copper	83.32		74.00	J	11		P
Iron	127100.00		136850.00		8		P
Magnesium	31840.00		34605.00		9		P
Manganese	950.40		1019.00		7		P
Sodium	56160.00		59450.00		6		P
Nickel	76.28		83.25	J	9		P
Lead	139.10		159.40		15	E	P
Potassium	17730.00		18380.00	J	4		P
Selenium	35.00	U	175.00	U			P
Thallium	25.00	U	125.00	U			P
Vanadium	226.40		241.30	J	7		P
Zinc	482.50		532.00		10		P

J/UJ

Cleveland

From: <Jim.Madison@testamericainc.com>
To: <anita.dodson@ch2m.com>; <Genevieve.Moore@CH2M.com>
Sent: Friday, February 08, 2008 2:09 PM
Attach: YORK16 Cyanide 5_6.pdf; york16R1.xls
Subject: Yorktown CTO-195 Final Revision

Anita and Genevieve -

Here is the last EDD revision. We actually found a small problem with the hardcopy on this one - the form 1's were all correct, but the cyanide value on the matrix spike and duplicate forms was incorrect. I am sending revisions for those two forms, with the appropriate page number. Please replace the ones in your hardcopy with these. I apologize for the inconvenience of all of this. Thanks for your patience.

Jim.

JIM MADISON
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

30 Community Drive, Suite 11
South Burlington, VT 05403
Tel 802.660.1990 | Direct 802.923.1028
www.testamericainc.com

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This SDG contains data analyzed for acid volatile sulfide and simultaneously extracted metals analytes (AVS/SEM). Please note that method criteria were used to assess all calibrations and quality control because Region III does not have a validation document for this method. Region III qualification conventions and qualifiers were used.

HOLDING TIMES

Sampling Date: 12/10 & 12/11 Cooler temps OK, receipt documentation present.
Received Date: 12/11 & 12/12 Holding time requirements were met.
Prep. Dates: AVS: 12/15/07, SEM - IC P 12/15/07 SEM - CV 12/21/07, 1/15/ 08 (MS RE only)
Analysis Dates: AVS: 12/15/07, SEM - ICP 12/28/07 SEM - CV 12/27/07, 1/18/08 (MS RE only)

CALIBRATIONS

AVS is a titration method. Analysis for SEM was per SW-846 methods. An initial calibration single point calibration was analyzed for ICP metals. Initial calibration curve was analyzed for Hg. All initial calibration criteria were met. Calibration verification criteria were met for all ICV and CCV standards. The ICSAB standards exhibited acceptable recoveries for all analytes. The CRI check standards were analyzed and met method criteria. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBlk	silver	0.0018J umole/g	0.009 umole/g	B
	lead	0.0031J umole/g	0.0155 umole/g	B
	cadmium	-0.00032J umole/g	< 10X RL (0.00022 umole/g)	L/UL
	copper	-0.0068J umole/g	< 10X RL (0.0020 umole/g)	L/UL

Field QC blanks were not submitted for the AVS/SEM fraction.

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB if less than the analyte CRDL is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

See validation report for specific samples and qualifications.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS of sample YS08-SD01-1207 exhibited non-compliant recoveries for several analytes. The analyte mercury was recovered at a concentration <30%. This analyte was rejected (R) in all field samples because all results were non-detect. The analytes silver, copper and lead were recovered at >30% but <75%. These analytes were flagged as biased low in the field samples. Some samples were also qualified due to blank contamination (silver and lead flagged B in some samples). The B flag takes priority over all other validation flags except the R flag. The PDS for lead was also very low. The MD exhibited acceptable RPDs. All associated LCS samples exhibited acceptable recoveries for all analytes.

SERIAL DILUTIONS

The serial dilution analysis of sample YS08-SD01-1207 exhibited compliant %Ds for all analytes except Cu. Copper was flagged as estimated in the field samples. Please note that Cu was flagged due to non-compliant spike recoveries and the MSL qualifier code was used.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the RL.

Sample ID: YBKG-SD01-1207 Duplicate Sample ID: YBKG-SD01P-1207

Analyte	Sample Conc.	Duplicate Conc.	RPD
lead	0.067	0.069	3%
zinc	0.75	0.71	5%
AVS	3.5	3.7	6%

Comments: No qualifications were required.

SAMPLE CALCULATION

EPA SAMPLE ID: YS22-SD03-1207
COMPOUND: AVS
CONCENTRATION: 9.6 umole/g
%Solids –

Titrated result: 307 mg/Kg

307 mg/Kg * 1Kg/1000g * 1 umole/0.032mg = 9.59 umole/g

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified.

Reviewer Jacqueline Cleveland **Date:** 2/28/08

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

PBLK1

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK16

Matrix: SOIL

Client: SUBR7

Lab Sample ID: PBLK1

% Solids:

Date Received:

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.0018	umole/g	B		0.00070	12/28/2007	20:47	PBSEM121507A
SW6010B	Cadmium	-0.00032	umole/g	B		0.00022	12/28/2007	20:47	PBSEM121507A
SW6010B	Copper	-0.0068	umole/g	B		0.0020	12/28/2007	20:47	PBSEM121507A
SW6010B	Nickel	ND	umole/g	U		0.0017	12/28/2007	20:47	PBSEM121507A
SW6010B	Lead	0.0031	umole/g	B		0.00097	12/28/2007	20:47	PBSEM121507A
SW6010B	Zinc	0.0039	umole/g	B		0.00038	12/28/2007	20:47	PBSEM121507A
SW7470A	Mercury	ND	umole/g	U		0.00012	12/27/2007	13:16	PBSEMHG121507
AVS	Acid Volatile Sulfide	ND	umole/g	U		0.50	12/16/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	NA							

Flag as noted in report
JJC 32408

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

USEPA-CLP FORMS

3

BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 SAS No.: _____ SDG No.: YORK16

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver	0.5	B	See PB 0.3	U	0.3	U	0.3	U	0.194	B	P
Cadmium	0.3	B	0.1	U	See PB -0.3	B	-0.2	B	-0.036	B	P
Copper	-1.5	B	-0.6	B	See PB -1.6	B	-2.2	B	-0.431	B	P
Nickel	0.4	U	0.4	U	-1.5	B	-0.7	B	0.100	U	P
Lead	-1.7	B	See PB 0.8	U	0.8	U	0.8	U	0.642	B	P
Zinc	0.5	B	See PB 1.2	B	0.3	B	0.3	B	0.252	B	P

See AVS form

JIC 22405

USEPA-CLP FORMS

3

BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 SAS No.: _____ SDG No.: YORK16

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver			-0.3	B	0.3	U					P
Cadmium			-0.2	B	-0.3	B					P
Copper			-3.5	B	-3.0	B					P
Nickel			-0.8	B	-1.4	B					P
Lead			-2.2	B	0.9	B					P
Zinc			0.3	B	0.3	B					P

See PBlk for blank flags
JAC 3/24/08

USEPA-CLP FORMS

3

BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 SAS No.: _____ SDG No.: YORK16

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver	0.4	U	0.9	B	0.4	U			0.098	U	P
Cadmium	0.1	B	0.3	B	0.1	B			0.021	U	P
Copper	0.4	U	2.3	B	0.7	B			0.110	U	P
Nickel	0.7	B	0.7	B	0.5	B			0.141	B	P
Lead	0.8	U	0.8	U	0.8	U			-0.311	B	P
Zinc	0.1	U	0.8	B	0.2	B			0.384	B	P

spike only

spike only

JAC 22408

USEPA-CLP FORMS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS08-SD01-1207S

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 SAS No.: _____ SDG No.: YORK16

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 34.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Silver	75 - 125	44.0706		0.2188	U	67.15	65.6	N	P	L/UL
Cadmium	75 - 125	126.6452		0.0729	U	167.88	75.4		P	
Copper	75 - 125	126.9138		4.4935	B	167.88	72.9	N	P	L/UL
Mercury	75 - 125	0.0697	U	0.0729	U	0.70	0.0	N	CV	4R
Nickel	75 - 125	133.9646		3.3803	B	167.88	77.8		P	
Lead	75 - 125	139.0680		21.0959		167.88	70.3	N	P	L/UL
Zinc	75 - 125	185.1330		57.7512		167.88	75.9		P	

JAC 22408

Comments:

USEPA-CLP FORMS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS08-SD01-1207L

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 SAS No.: _____ SDG No.: YORK16

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Silver	3.00	U	41.60	B	100.0		P
Cadmium	1.00	U	5.00	U			P
Copper	61.60	B	25.00	U	100.0	E	P
Nickel	46.34	B	47.70	B	2.9		P
Lead	289.20		301.70	B	4.3		P
Zinc	791.70		867.10	B	9.5		P

J/UJ

flags for M's were used JAC 3/2/18

Cleveland

From: "Madison, Jim" <Jim.Madison@testamericainc.com>
To: "Cleveland" <cleve137@charter.net>
Sent: Thursday, February 21, 2008 8:04 AM
Subject: RE: SEM Metals Calculation

You are absolutely correct Jackie - although the solution is liquid, we do weigh it out and the form 13 should reference grams (the raw prep log on page 453 does show grams). Thanks for pointing this out - we were not aware that the form 13 was incorrect, and will change that. I appreciate the feedback.

Jim.

-----Original Message-----
From: Cleveland [mailto:cleve137@charter.net]
Sent: Wednesday, February 20, 2008 6:25 PM
To: Madison, Jim
Subject: Re: SEM Metals Calculation

Jim,

Quick question: The sample aliquot on the calcuation example is in g but the Form 13 preparation log (p371 of sample you sent) is in ml. I am assuming that the calculation example is correct and the Form 13 is a typo?

Jackie
----- Original Message -----
From: "Madison, Jim" <Jim.Madison@testamericainc.com>
To: "Jackie Cleveland" <cleve137@charter.net>
Sent: Wednesday, February 20, 2008 2:03 PM
Subject: FW: SEM Metals Calculation

Hi Jackie - Our IT specialist put together an example calculation - she pulled the appropriate pages from the data package behind the calculation page in the attachment. Please let us know if you have any questions.

Jim.

-----Original Message-----
From: Chirgwin, Karen
Sent: Wednesday, February 20, 2008 2:45 PM
To: Madison, Jim
Cc: McCracken, Kirstin
Subject: SEM Metals Calculation

Jim,

I have put together an example SEM calculation for Jackie Cleveland. This should be what she needs.

Please let me know if she has any additional questions.

Karen

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Cleveland

From: "Madison, Jim" <Jim.Madison@testamericainc.com>
To: "Cleveland" <cleve137@charter.net>
Sent: Wednesday, February 20, 2008 7:13 AM
Attach: AVSSEM Allen Fu Paper.pdf
Subject: RE: Request for further Information RE: AVS/SEM NWS Yorktown

Sorry Jackie - I did not notice the front end of the website - I had it in my favorites as Sediment Info, and forgot it was internal - here is a pdf copy. I should be able to get an example calculation today...

Jim.

From: Cleveland [mailto:cleve137@charter.net]
Sent: Tuesday, February 19, 2008 6:48 PM
To: Madison, Jim
Subject: Re: Request for further Information RE: AVS/SEM NWS Yorktown

Jim,

I am unable to access the website through the link that you sent. It may be a proprietary site. Anyway, I will look at the other copy you sent and will be watching for the example calculations from YORK19. Thanks so much for your help.

Jackie

> ----- Original Message -----
> **From:** Madison, Jim
> **To:** Cleveland
> **Cc:** DataQual Environmental Services, LLC ; Chelsea Bennet
> **Sent:** Tuesday, February 19, 2008 9:40 AM
> **Subject:** RE: Request for further Information RE: AVS/SEM NWS Yorktown
>
> Jackie - I found the attached link to a cleaner copy of the method...
>
> Jim.
>
> http://stlnet/sedweb/MetalsBioavailability/AVSSEM/AVS%20Method.pdf
>
> ---
>
> **From:** Madison, Jim
> **Sent:** Tuesday, February 19, 2008 10:27 AM
> **To:** 'Cleveland'
> **Cc:** DataQual Environmental Services, LLC; Chelsea Bennet
> **Subject:** RE: Request for further Information RE: AVS/SEM NWS Yorktown
>
> Hi Jackie -
>
> I am looking for a clean copy of the original AVS-SEM paper written by Allen and Fu - I can scan my copy, but it's a bit fuzzy. For now, here is our SOP, which explains the approach and has some example calculations. We have an automated program to convert to umole/gram, so do not write out the calculations - but I'll see if we

can do that for YORK19. The paper does stipulate conversion to umole/gram, so that is our default and should be the one result used in the final report. We only report the AVS and metals both ways because we are a bit limited by the commercial software we use to report metals (MARRS). We must report in ug/L to load data into the conversion for umole/gram...

Jim.

From: Cleveland [mailto:cleve137@charter.net]
Sent: Monday, February 18, 2008 5:13 PM
To: Madison, Jim
Cc: DataQual Environmental Services, LLC; Chelsea Bennet
Subject: Request for further Information RE: AVS/SEM NWS Yorktown

Dear Jim,

Good Afternoon. I am validating the metals analyzed by TestAmerica South Burlington for AVS/SEM and I need a couple of things from you. Please provide me with a copy of the method(s) used for these analyses. I also need calculation examples for the conversion of the metals and sulfide results from mg/Kg to umole/g. The SDG I am currently working on is YORK19 so if you would pull your examples from that SDG that would be great! I noticed that you have provided results forms for both the AVS and the metals using both units. The EDD is presented in umoles/g for both the metals and the sulfide so I am assuming this is the unit requested for the targets. Please let me know if I am correct in this assumption as I only want to present one unit for the metals and one for the sulfide in my final report.

Thank you for your help.

Jackie

Jacqueline Cleveland, VP
DataQual Environmental Services, LLC
137 Royallprairie Lane
O'Fallon, MO 63368-6986
636-352-9391
cleve137@charter.net

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SEM Metals Calculations:

The general calculation for SEM metals is:

Result (mg/Kg) = Result(ug/L) * (final volume (mL)/Initial sample weight (g))*Dilution*(100/Solids)

Result (umole/g) = ((Result (mg/Kg))/(mw (g/mole)) * (correction for stoichiometry)

For sample YS12-SD04-1207 (lab ID 735734), the result for Copper is calculated as follows:

Result(mg/Kg) = ((6.7860 ug/L)*(0.25mL/11.92g)*10*(100/83.6)) = 1.7 mg/Kg (reported on Form 1)

Result (umole/g) = ((1.7 mg/Kg)/(63.546 g/mole)) * 1 = 0.027 umole/g (reported on AVS/SEM Summary)

Molecular weight for SEM Metals (g/mole):

Element	Molecular Weight (g/mole)	Stoichiometry
Cadmium	112.411	1
Copper	63.546	1
Cobalt	58.9332	1
Nickel	58.6934	1
Zinc	65.39	1
Lead	207.2	1
Sulfide	32.066	1
Mercury	200.59	1
Chromium	51.9661	1
Aluminum	26.981538	1
Antimony	121.760	1
Silver	107.868	2

USEPA-CLP FORMS

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PREPARATION LOG

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 SAS No.: _____ SDG No.: YORK19

Method: CV

EPA Sample No.	Preparation Date	Initial Volume mL	Volume (mL)
BLK011508A	01/15/08	10.00	250.0
LCS011508A	01/15/08	10.00	250.0
YS12-SD01-1207	01/15/08	10.05	250.0
YS12-SD01-1207D	01/15/08	10.12	250.0
YS12-SD01-1207S	01/15/08	10.15	250.0
YS12-SD02-1207	01/15/08	10.62	250.0
YS12-SD02P-1207	01/15/08	10.25	250.0
YS12-SD03-1207	01/15/08	10.35	250.0
[illegible]	01/15/08	11.92	250.0
YS12-SD05-1207	01/15/08	10.08	250.0
YS12-SD06-1207	01/15/08	11.80	250.0
YS12-SD07-1207	01/15/08	11.00	250.0
YS12-SD07P-1207	01/15/08	10.42	250.0

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS12-SD04-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK19

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735734

% Solids: 83.6

Date Received: 12/18/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.0013	umole/g	B		0.00091	01/24/2008	03:25	PBSEM011508A
SW6010B	Cadmium	0.00041	umole/g	B		0.00019	01/24/2008	03:25	PBSEM011508A
SW6010B	Copper	0.027	umole/g	B		0.0017	01/24/2008	03:25	PBSEM011508A
SW6010B	Nickel	0.0013	umole/g	B		0.00069	01/24/2008	03:25	PBSEM011508A
SW6010B	Lead	0.038	umole/g			0.0010	01/24/2008	03:25	PBSEM011508A
SW6010B	Zinc	0.10	umole/g			0.00034	01/24/2008	03:25	PBSEM011508A
SW7470A	Mercury	ND	umole/g	U		0.00012	01/18/2008	12:35	PBSEMHG011608
AVS	Acid Volatile Sulfide	ND	umole/g	U		0.60	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	NA							

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS12-SD04-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 SAS No.: SDG No.: YORK19

Matrix (soil/water): SEDIMENT Lab Sample ID: 735734

Level (low/med): LOW Date Received: 12/18/07

% Solids: 83.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.14	B		P
7440-43-9	Cadmium	0.046	B		P
~~7440-50-8~~	Copper	1.7	B		P
7439-97-6	Mercury	0.025	U		CV
7440-02-0	Nickel	0.074	B		P
7439-92-1	Lead	7.8		*	P
7440-66-6	Zinc	6.6			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form I - IN

TestAmerica Burlington **Cu-LL**

Analytical Review Report
Data File: 012308-05.txt

Date Printed: 1/24/08
Truevalue List: ICP7_LCSS-AQ_010408

TJA ICAP 7
ICP METALS 6010

Analysis Start Date: 01/24/08
Analysis End Date: 01/24/08

Start Time: 02:02:3
End Time: 03:46:1

Lab Number	Dil	Flag	Raw Avg (ug/L)	Rep1 (ug/L)	Rep2 (ug/L)	%RSD	Conc	Rec	TV	LCL	UCL
Instrument Quality Control Samples											
S0	1		0.092	0.000	0.000	2.85	0.092				
STD4	1		17.830	0.000	0.000	0.86	17.8				
ICV1	1	PASS	465.800	466.700	464.800	0.29	465.80	93.2	500.0	90	110
ICB1	1	PASS	-0.333	-0.484	-0.182	64.05	-0.3				+/-25.00
ICSA1	1	PASS	0.283	0.535	0.031	126.10	0.28			-75	75
ICSAB1	1	PASS	483.400	485.900	480.800	0.75	483	99.4	486	80	120
CRI1	1	PASS	23.020	23.250	22.790	1.40	23.02	92.1	25.0	50	150
CCV1	1	PASS	181.900	182.600	181.200	0.52	181.90	91.0	200.0	90	110
CCB1	1	PASS	0.278	-0.130	0.687	207.60	0.3				+/-25.00
CCV2	1	PASS	181.000	181.700	180.400	0.49	181.00	90.5	200.0	90	110
CCB2	1	PASS	-0.289	-0.295	-0.283	2.83	-0.3				+/-25.00
CCV3	1	PASS	182.200	182.800	181.700	0.43	182.20	91.1	200.0	90	110
CCB3	1	PASS	0.164	0.373	-0.046	180.90	0.2				+/-25.00
Quality Control and Field Samples											
LRV	1	PASS	3998.000	3995.000	4002.000	0.12	4000				
BLK011508A	10	PASS	0.848	1.953	-0.257	184.30	0.85				
LCS011508A	1	PASS	2221.000	2219.000	2222.000	0.10	2220	58.8	2500		
737730	10	PASS	79.420	79.440	79.400	0.04	79.4				
737730L	50	FAIL	95.790	91.890	99.690	5.76	478.95				
735730A	10	PASS	316.600	317.600	315.500	0.48	316.60	84.9	250.0		
735730DP	10	PASS	70.910	71.840	69.980	1.86	8.5537				
735730MS	10	PASS	2167.000	2161.000	2173.000	0.39	216.7000	53.5	2500 ~~25.00~~		
735731	10	PASS	28.050	27.870	28.220	0.87	3.5				
735732	10	PASS	23.340	21.370	25.310	11.94	3.0				
735733	10	PASS	10.850	11.980	9.719	14.72	1.3				
735734	10	PASS	67.860	66.140	69.570	3.57	8.1				
735965	10	PASS	49.800	51.840	47.750	5.81	6.8				
735966	10	PASS	7.614	5.983	9.244	30.29	0.84				
735967	10	PASS	23.680	21.550	25.800	12.70	4.1				
735968	10	PASS	42.980	46.540	39.410	11.74	5.9				

LRV = 100,000
IDL = 0.44 (4.4)

— already corrected for dilution —

undiluted result = 6.7860

Holding Times
Sampling Date: 12/10, 12/11
Received Date: 12/11, 12/12 at Burlington, received 12/12, 12/13 at Pittsburgh
Extraction Date: 12/18
Analysis Dates: 1/7 & 1/8

All extraction and analysis holding times were met.

Calibrations
Initial calibrations were performed according to the CLP method with a three-point curve for all single component pesticides and a single point for toxaphene. Single point injections were analyzed for the aroclors. Calibration factors were calculated. %RSDs were within QC limits. Continuing calibration standards were analyzed per the CLP method. All PEM breakdowns and %D criteria were met. All INDA/INDB %D criteria were within QC limits. Column resolution criteria were met. Retention time windows were provided. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Raw data was verified.

Initial Calibration Date: 1/07/08, GC12
CF and %RSD Calculations: **Sequence 1/7/08-1/8/08 on GC12, RTX-1701 & RTX-50**

Compound Name: 4,4'-DDD, mid-level, RTX-50
Lab Value: 8851475

Area of Compound	354059
Conc. of Compound	0.04
Calculated CF	8851475

Compound Name: 4,4'-DDD
Lab Value: 5.0

CF of STD 1	9783000
CF of STD 2	8851475
CF of STD 3	9318875
% RSD	4.999

Continuing Calibration File ID: **Sequence 1/7/08-1/8/08 on GC12, RTX-1701 & RTX-50**
CONC. and %D Calculations:
Compound Name: heptachlor epoxide in INDBMYC, 1/8/08, 0908 on GC12, RTX50
Lab Value: 0.02025

area of compound	
mid-level CF	
calculated conc.	

Compound Name: heptachlor epoxide in INDBMYC, 1/8/08, 0908 on GC12, RTX50
Lab Value: 1.2

nominal amount	0.0200
calculated amount	0.02025
% D	1.25

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is ound in the blank but not in the sample.
- Any compound detected in the sample, and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is less than five times (5X) the blank value. (Region III)

No contamination was reported in the associated method blank or instrument blanks. The associated field QC blanks did not exhibit target compound contamination.

Blank ID	Compound	Concentration	Action Level	Q Flag

SURROGATE RECOVERIES

All surrogate recoveries were acceptable. Samples did not require qualification due to non-compliant surrogate recoveries.

MATRIX SPIKE/MATRIX SPIKE DUPLICATES

The MS/MSD pair of sample YS08-SD01-1207 exhibited non-compliant recoveries for lindane and 4,4'-DDT in both the MS & MSD. All RPDs were acceptable. No qualifications were required.

LABORATORY CONTROL SAMPLES

There was no LCS sample submitted for this SDG.

FIELD DUPLICATE SAMPLE SUMMARY

Compound	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!

Sample ID: **YS22-SD01-1207** **Duplicate ID:** **YS22-SD01P-1207**

Sample ID: **YS22-SD04-1207** **Duplicate ID:** **YS22-SD04P-1207**

Comments: No positive results

SAMPLE RESULT VERIFICATION

Reported sample results and raw data were verified. There were no positive results reported in this SDG.

SAMPLE CALCULATION

EPA SAMPLE ID: YS08-SD01-1207MS
STANDARD ID: ICAL 1/7/08, mid-level CF, RTX-1701
COMPOUND: dieldrin
CONCENTRATION: 61.4 ug/Kg

	Water (ug/L)	Soil (ug/Kg)
Area of Compound		421962
CF of Compound		13467225
Final Volume (ul)		10000
Dilution Factor		1
GPC Factor	na	2
Injection Volume		1
Weight of Sample	na	30
Initial Volume of Sample (ml)		NA
Dryness Factor	na	0.34
Concentration		61.4

Reviewer Jacqueline Cleveland **Date:** 2 / 28 / 08

OCLP OLM04.3 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: TestAmerica Burlington

Lab Code: TALPIT SDG No: YORK16

Matrix Spike ID: YS08-SD01-1207 Level:(low/med) LOW

Lot #: C7L130347 WO #: KD4VA1AF
BATCH: 7352087

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
Aldrin	49.0	ND	30.0	61	34 - 132	
Dieldrin	98.0	ND	61.4	63	31 - 134	
Endrin	98.0	ND	68.8	70	42 - 139	
gamma-BHC (Lindane)	49.0	ND	9.22	19*	46 - 127	a
4,4'-DDT	98.0	ND	17.3	18*	23 - 134	a
Heptachlor	49.0	ND	30.1	61	35 - 130	

No Quals
JAC 22408

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 2 out of 6 outside limits

COMMENTS:

FORM III

OCLP OLM04.3 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: TestAmerica Burlington

Lab Code: TALPIT SDG No: YORK16

Matrix Spike ID: YS08-SD01-1207 Level:(low/med) LOW

Lot #: C7L130347 WO #: KD4VA1AG
BATCH: 7352087

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	QUAL
Aldrin	49.0	28.8	59	3.8	43	34 - 132	
Dieldrin	98.0	59.9	61	2.6	38	31 - 134	
Endrin	98.0	66.3	68	3.6	45	42 - 139	
gamma-BHC (Lindane)	49.0	7.96	16*	15	50	46 - 127	a
4,4'-DDT	98.0	14.3	15*	18	50	23 - 134	a
Heptachlor	49.0	29.6	60	1.8	31	35 - 130	

NOTES (S):

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 2 out of 6 outside limits

COMMENTS:

FORM III

Holding Times

Sampling Date: 12/10&11/07
Received Date: 12/11, 12/12
12/12, 12/13 at subcontractor (West Sacramento)
Extraction Dates: 12/19, 8330/8332; 12/19, Mod. 8330 (direct aspiration method)
Analysis Dates: 12/23, 8330/8332; 1-2 & 1-3, Mod. 8330 (direct aspiration method)

Sample receipt documentation was in order. All extraction and analysis holding time requirements were met.

Calibrations

The samples in this SDG were analyzed according to SW-846 methods 8330/8332/Modified 8330. Initial calibrations were performed with a standard six to eight-point curve for all target compounds. Curve calibration factors were calculated or linear regression curves were plotted. %RSDs or correlation coefficients were within QC limits. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met. Raw data was verified. No qualifications were required due to unmet initial or continuing calibration criteria.

Initial Calibration Date: 10/20/07, Instrument LC10.I C-18 column
CF and %RSD Calculations:

Compound Name: nitroglycerin in level 7
Lab Value: 74.38600

Area of Compound	37193
Conc. of Compound	500
Calculated CF	74.386

Compound Name: nitroglycerin
Lab Value: 1.867

CF of STD 1	
CF of STD 2	
CF of STD 3	76.05
CF of STD 4	73.76
CF of STD 5	76.17
CF of STD 6	73.205
CF of STD 7	74.386
CF of STD 8	76.484
% RSD	1.8674

Initial Calibration Date: 10/10/07, Instrument LC9 CN column
CF and %RSD Calculations:

Compound Name: HMX in level 3
Lab Value: 48.6

Area of Compound	972
Conc. of Compound	20
Calculated CF	48.6

Compound Name: HMX
Lab Value: 6.038

CF of STD 1	56.
CF of STD 2	53.
CF of STD 3	48.6
CF of STD 4	49.06
CF of STD 5	47.66
CF of STD 6	48.25
CF of STD 7	48.708
CF of STD 8	47.642
% RSD	6.0384

Continuing Calibration File ID:
CONC. and %D Calculations:

Compound Name: 2,6-dinitrotoluene, 12/23/07, 04:49 std5 on LC10
Lab Value: 98.6900

Area of Compound	5181
avg. CF	52.49888
calculated amount	98.68782

Compound Name: 2,6-dinitrotoluene, 12/23/07, 04:49 std5 on LC10
Lab Value: 1

nominal amount	100.
calculated amount	98.68782
% D	1.3122

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

No contamination was reported in the associated laboratory blanks. The associated field QC blank did not exhibit target compound contamination that resulted in qualification of the data.

SURROGATE RECOVERIES

All surrogate recovery criteria were met. No qualifications were required.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS08-SD01-1207 exhibited acceptable recoveries for all explosives compounds. The LCS samples provided with this SDG also exhibited acceptable recoveries for all compounds.

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: **YBKG-SD01-1207** **Duplicate ID:** **YBKG-SD01P-1207**
Comments: No positive results were reported in the field duplicate pairs.

SAMPLE RESULT VERIFICATION

No positive results above the reporting limits were reported in the field samples analyzed in this SDG. Raw data was verified.

EPA SAMPLE ID: YS08-SD01-1207MS (LAB ID – KD5FV1AG)
STANDARD ID: ICAL 10/20/2007 LC10
COMPOUND: 2-NITROTOLUENE
CONCENTRATION: 0.923 mg/Kg

	Water (ug/L)	Soil (mg/Kg)
Area of Compound		1702
CF of Compound		36.32175
Final Volume (ml)		40
Dilution Factor		1
Weight of Sample	na	2
Initial Volume of Sample		NA
conversion factor (ug to mg)		0.001
		0.92333

Reviewer Jacqueline Cleveland **Date:** 22808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-TB01-121207
Lab Sample ID: 680-32687-1
Matrix: Water
Lab File ID: s00390.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/18/2007 23:00
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93973
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

LM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-TB01-121207
Lab Sample ID: 680-32687-1
Matrix: Water
Lab File ID: s00390.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/18/2007 23:00
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93973
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

VM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-TB01-121207 | Lab Sample ID: 680-32687-1

Matrix: Water | Lab File ID: s00390.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/18/2007 23:00

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

UM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-GW22-1207
Lab Sample ID: 680-32687-2
Matrix: Water
Lab File ID: s00397.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/19/2007 01:33
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93973
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	8.4	J	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	2.1	J	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	280	E R,DL	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

WM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-GW22-1207
Lab Sample ID: 680-32687-2
Matrix: Water
Lab File ID: s00397.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/19/2007 01:33
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93973
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	1300	~~E~~ R,DL	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

VM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW22-1207 | Lab Sample ID: 680-32687-2

Matrix: Water | Lab File ID: s00397.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 01:33

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-GW22-1207 DL
Lab Sample ID: 680-32687-2 DL
Matrix: Water
Lab File ID: s00416.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/19/2007 22:35
Level: (low/med) Low
Dilution Factor: 10
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	100	U R,DL	100	3.9
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	2.6
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	100	3.5
79-00-5	1,1,2-Trichloroethane	100	U	100	5.1
75-34-3	1,1-Dichloroethane	100	U	100	3.2
75-35-4	1,1-Dichloroethene	100	U	100	3.6
120-82-1	1,2,4-Trichlorobenzene	100	U	100	3.5
96-12-8	1,2-Dibromo-3-Chloropropane	100	U	100	4.8
95-50-1	1,2-Dichlorobenzene	100	U	100	3.3
107-06-2	1,2-Dichloroethane	100	U	100	3.1
78-87-5	1,2-Dichloropropane	100	U	100	3.6
541-73-1	1,3-Dichlorobenzene	100	U	100	3.1
106-46-7	1,4-Dichlorobenzene	100	U	100	3.3
78-93-3	2-Butanone (MEK)	100	U	100	6.0
591-78-6	2-Hexanone	100	U	100	6.8
108-10-1	4-Methyl-2-pentanone (MIBK)	100	U	100	6.0
67-64-1	Acetone	100	U	100	17
71-43-2	Benzene	100	U	100	3.2
75-25-2	Bromoform	100	U	100	4.1
74-83-9	Bromomethane	100	U	100	5.0
75-15-0	Carbon disulfide	100	U	100	1.7
56-23-5	Carbon tetrachloride	100	U	100	2.7
108-90-7	Chlorobenzene	100	U	100	3.4
124-48-1	Chlorodibromomethane	100	U	100	3.0
75-00-3	Chloroethane	100	U	100	10
67-66-3	Chloroform	100	U	100	2.9
74-87-3	Chloromethane	100	U	100	2.8
156-59-2	cis-1,2-Dichloroethene	260	D	100	3.3
10061-01-5	cis-1,3-Dichloropropene	100	U R,DL	100	3.7
110-82-7	Cyclohexane	100	U	100	10
75-27-4	Dichlorobromomethane	100	U	100	3.4
75-71-8	Dichlorodifluoromethane	100	U	100	3.3
100-41-4	Ethylbenzene	100	U	100	3.0
106-93-4	Ethylene Dibromide	100	U	100	3.0
98-82-8	Isopropylbenzene	100	U	100	2.7

02/06/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-GW22-1207 DL
Lab Sample ID: 680-32687-2 DL
Matrix: Water
Lab File ID: s00416.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/19/2007 22:35
Level: (low/med) Low
Dilution Factor: 10
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	100	U R,DL	100	4.2
1634-04-4	Methyl tert-butyl ether	100	U	100	5.8
108-87-2	Methylcyclohexane	100	U	100	2.5
75-09-2	Methylene Chloride	100	U	100	10
100-42-5	Styrene	100	U	100	3.6
127-18-4	Tetrachloroethene	100	U	100	2.8
108-88-3	Toluene	100	U	100	3.1
156-60-5	trans-1,2-Dichloroethene	100	U	100	3.0
10061-02-6	trans-1,3-Dichloropropene	100	U	100	2.7
79-01-6	Trichloroethene	1500	D	100	4.0
75-69-4	Trichlorofluoromethane	100	U R,DL	100	2.9
75-01-4	Vinyl chloride	100	U	100	2.0
1330-20-7	Xylenes, Total	100	U	100	8.7

WM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-GW22-1207 DL
Lab Sample ID: 680-32687-2 DL
Matrix: Water
Lab File ID: s00416.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/19/2007 22:35
Level: (low/med) Low
Dilution Factor: 10
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-EB01-121207
Lab Sample ID: 680-32687-3
Matrix: Water
Lab File ID: s00391.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/18/2007 23:22
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93973
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	2.2	J	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

021608

0.21

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-EB01-121207
Lab Sample ID: 680-32687-3
Matrix: Water
Lab File ID: s00391.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/18/2007 23:22
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93973
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	2.1	J	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

02/6/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-EB01-121207
Lab Sample ID: 680-32687-3
Matrix: Water
Lab File ID: s00391.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/18/2007 23:22
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93973
Units: ug/L
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-GW21-1207
Lab Sample ID: 680-32687-4
Matrix: Water
Lab File ID: s00398.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/19/2007 01:55
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93973
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.3	J	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	12		10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	54		10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

02/16/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS12-GW21-1207
Lab Sample ID: 680-32687-4
Matrix: Water
Lab File ID: s00398.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/19/2007 01:55
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 93973
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	3.4	J	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	3100	E RIX	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW21-1207 | Lab Sample ID: 680-32687-4

Matrix: Water | Lab File ID: s00398.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 01:55

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW21-1207 DL | Lab Sample ID: 680-32687-4 DL

Matrix: Water | Lab File ID: s00450.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 21:32

Level: (low/med) Low | Dilution Factor: 50

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94301 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	500	U R,DL	500	20
79-34-5	1,1,2,2-Tetrachloroethane	500	U	500	13
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	500	U	500	18
79-00-5	1,1,2-Trichloroethane	500	U	500	26
75-34-3	1,1-Dichloroethane	500	U	500	16
75-35-4	1,1-Dichloroethene	500	U	500	18
120-82-1	1,2,4-Trichlorobenzene	500	U	500	18
96-12-8	1,2-Dibromo-3-Chloropropane	500	U	500	24
95-50-1	1,2-Dichlorobenzene	500	U	500	17
107-06-2	1,2-Dichloroethane	500	U	500	16
78-87-5	1,2-Dichloropropane	500	U	500	18
541-73-1	1,3-Dichlorobenzene	500	U	500	16
106-46-7	1,4-Dichlorobenzene	500	U	500	17
78-93-3	2-Butanone (MEK)	500	U	500	30
591-78-6	2-Hexanone	500	U	500	34
108-10-1	4-Methyl-2-pentanone (MIBK)	500	U	500	30
67-64-1	Acetone	500	U	500	85
71-43-2	Benzene	500	U	500	16
75-25-2	Bromoform	500	U	500	21
74-83-9	Bromomethane	500	U	500	25
75-15-0	Carbon disulfide	500	U	500	8.5
56-23-5	Carbon tetrachloride	500	U	500	14
108-90-7	Chlorobenzene	500	U	500	17
124-48-1	Chlorodibromomethane	500	U	500	15
75-00-3	Chloroethane	500	U	500	50
67-66-3	Chloroform	500	U	500	15
74-87-3	Chloromethane	500	U	500	14
156-59-2	cis-1,2-Dichloroethene	500	U	500	17
10061-01-5	cis-1,3-Dichloropropene	500	U	500	19
110-82-7	Cyclohexane	500	U	500	50
75-27-4	Dichlorobromomethane	500	U	500	17
75-71-8	Dichlorodifluoromethane	500	U	500	17
100-41-4	Ethylbenzene	500	U	500	15
106-93-4	Ethylene Dibromide	500	U	500	15
98-82-8	Isopropylbenzene	500	U	500	14

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW21-1207 DL | Lab Sample ID: 680-32687-4 DL

Matrix: Water | Lab File ID: s00450.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 21:32

Level: (low/med) Low | Dilution Factor: 50

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94301 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	500	U RDL	500	21
1634-04-4	Methyl tert-butyl ether	500	U	500	29
108-87-2	Methylcyclohexane	500	U	500	13
75-09-2	Methylene Chloride	500	U	500	50
100-42-5	Styrene	500	U	500	18
127-18-4	Tetrachloroethene	500	U	500	14
108-88-3	Toluene	500	U	500	16
156-60-5	trans-1,2-Dichloroethene	500	U	500	15
10061-02-6	trans-1,3-Dichloropropene	500	U	500	14
79-01-6	Trichloroethene	5900	D	500	20
75-69-4	Trichlorofluoromethane	500	U RDL	500	15
75-01-4	Vinyl chloride	500	U	500	10
1330-20-7	Xylenes, Total	500	U	500	44

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW21-1207 DL | Lab Sample ID: 680-32687-4 DL

Matrix: Water | Lab File ID: s00450.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 21:32

Level: (low/med) Low | Dilution Factor: 50

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94301 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW04-1207 | Lab Sample ID: 680-32714-1

Matrix: Water | Lab File ID: s00414.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 21:51

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS22-SW04-1207
Lab Sample ID: 680-32714-1
Matrix: Water
Lab File ID: s00414.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5 (mL)
Date Analyzed: 12/19/2007 21:51
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW04-1207 | Lab Sample ID: 680-32714-1

Matrix: Water | Lab File ID: s00414.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 21:51

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW05-1207 | Lab Sample ID: 680-32714-3

Matrix: Water | Lab File ID: s00415.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 22:13

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW05-1207 | Lab Sample ID: 680-32714-3

Matrix: Water | Lab File ID: s00415.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 22:13

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW05-1207 | Lab Sample ID: 680-32714-3

Matrix: Water | Lab File ID: s00415.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 22:13

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW06-1207 | Lab Sample ID: 680-32714-5

Matrix: Water | Lab File ID: s00401.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 03:01

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW06-1207 | Lab Sample ID: 680-32714-5

Matrix: Water | Lab File ID: s00401.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 03:01

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	2.1	J	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW06-1207 | Lab Sample ID: 680-32714-5

Matrix: Water | Lab File ID: s00401.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 03:01

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-TB01-121207 | Lab Sample ID: 680-32714-7

Matrix: Water | Lab File ID: s00392.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/18/2007 23:44

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

02/08

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-TB01-121207 | Lab Sample ID: 680-32714-7

Matrix: Water | Lab File ID: s00392.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/18/2007 23:44

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

VM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-TB01-121207 | Lab Sample ID: 680-32714-7

Matrix: Water | Lab File ID: s00392.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/18/2007 23:44

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

WM 02/608

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-EB01-121207 | Lab Sample ID: 680-32714-8

Matrix: Water | Lab File ID: s00393.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 00:06

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	2.0	J	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

LM 021608

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-EB01-121207 | Lab Sample ID: 680-32714-8

Matrix: Water | Lab File ID: s00393.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 00:06

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

021608

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-EB01-121207 | Lab Sample ID: 680-32714-8

Matrix: Water | Lab File ID: s00393.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 00:06

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-SW02-1207 | Lab Sample ID: 680-32771-1

Matrix: Water | Lab File ID: s00402.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 03:22

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-SW02-1207 | Lab Sample ID: 680-32771-1

Matrix: Water | Lab File ID: s00402.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 03:22

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-SW02-1207 | Lab Sample ID: 680-32771-1

Matrix: Water | Lab File ID: s00402.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 03:22

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW04-1207 | Lab Sample ID: 680-32771-3

Matrix: Water | Lab File ID: s00403.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 03:44

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW04-1207 | Lab Sample ID: 680-32771-3

Matrix: Water | Lab File ID: s00403.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 03:44

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW04-1207 | Lab Sample ID: 680-32771-3

Matrix: Water | Lab File ID: s00403.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 03:44

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 1 | TIC Total: 7.2

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.98	7.2	

WM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW03-1207 | Lab Sample ID: 680-32771-5

Matrix: Water | Lab File ID: s00404.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 04:06

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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051

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW03-1207 | Lab Sample ID: 680-32771-5

Matrix: Water | Lab File ID: s00404.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 04:06

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

VM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW03-1207 | Lab Sample ID: 680-32771-5

Matrix: Water | Lab File ID: s00404.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 04:06

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 1 | TIC Total: 6.1

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.98	6.1	

WM 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW02-1207 | Lab Sample ID: 680-32771-7

Matrix: Water | Lab File ID: s00405.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 04:28

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW02-1207 | Lab Sample ID: 680-32771-7

Matrix: Water | Lab File ID: s00405.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 04:28

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

02/6/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW02-1207 | Lab Sample ID: 680-32771-7

Matrix: Water | Lab File ID: s00405.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 04:28

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-EB01-121307 | Lab Sample ID: 680-32771-9

Matrix: Water | Lab File ID: s00394.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 00:28

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-EB01-121307 | Lab Sample ID: 680-32771-9

Matrix: Water | Lab File ID: s00394.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 00:28

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-EB01-121307 | Lab Sample ID: 680-32771-9

Matrix: Water | Lab File ID: s00394.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 00:28

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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053

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-TB01-121307 | Lab Sample ID: 680-32771-10

Matrix: Water | Lab File ID: s00395.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 00:50

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

 021608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-TB01-121307 | Lab Sample ID: 680-32771-10

Matrix: Water | Lab File ID: s00395.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 00:50

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-TB01-121307 | Lab Sample ID: 680-32771-10

Matrix: Water | Lab File ID: s00395.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 00:50

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-FB01-121307 | Lab Sample ID: 680-32771-11

Matrix: Water | Lab File ID: s00396.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 01:11

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

 02/26/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-FB01-121307 | Lab Sample ID: 680-32771-11

Matrix: Water | Lab File ID: s00396.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 01:11

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

 02/6/08 1.6%

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-FB01-121307 | Lab Sample ID: 680-32771-11

Matrix: Water | Lab File ID: s00396.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 01:11

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 93973 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW05-1207 | Lab Sample ID: 680-32816-1

Matrix: Water | Lab File ID: s00421.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 00:24

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YSA14-SW05-1207
Lab Sample ID: 680-32816-1
Matrix: Water
Lab File ID: s00421.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/20/2007 00:24
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

 02/26/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW05-1207 | Lab Sample ID: 680-32816-1

Matrix: Water | Lab File ID: s00421.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 00:24

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 1 | TIC Total: 5.5

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.98	5.5	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW02-1207 | Lab Sample ID: 680-32816-3

Matrix: Water | Lab File ID: s00422.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 00:46

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YSA14-SW02-1207
Lab Sample ID: 680-32816-3
Matrix: Water
Lab File ID: s00422.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/20/2007 00:46
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW02-1207 | Lab Sample ID: 680-32816-3

Matrix: Water | Lab File ID: s00422.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 00:46

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW03-1207 | Lab Sample ID: 680-32816-5

Matrix: Water | Lab File ID: s00423.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 01:08

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW03-1207 | Lab Sample ID: 680-32816-5

Matrix: Water | Lab File ID: s00423.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 01:08

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW03-1207 | Lab Sample ID: 680-32816-5

Matrix: Water | Lab File ID: s00423.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 01:08

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW02-1207 | Lab Sample ID: 680-32816-7

Matrix: Water | Lab File ID: s00424.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 01:30

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethan e	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YBKG-SW02-1207
Lab Sample ID: 680-32816-7
Matrix: Water
Lab File ID: s00424.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/20/2007 01:30
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

UM 02/28

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW02-1207 | Lab Sample ID: 680-32816-7

Matrix: Water | Lab File ID: s00424.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 01:30

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

VM 021608

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-EB01-121407 | Lab Sample ID: 680-32816-9

Matrix: Water | Lab File ID: s00418.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 23:19

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	1.9	J	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-EB01-121407 | Lab Sample ID: 680-32816-9

Matrix: Water | Lab File ID: s00418.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 23:19

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

VM 021608

- 1.79

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-EB01-121407 | Lab Sample ID: 680-32816-9

Matrix: Water | Lab File ID: s00418.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 23:19

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

VW 021608

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-TB01-121407 | Lab Sample ID: 680-32816-10

Matrix: Water | Lab File ID: s00419.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 23:41

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

021608

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-TB01-121407 | Lab Sample ID: 680-32816-10

Matrix: Water | Lab File ID: s00419.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 23:41

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

MW 021608

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-TB01-121407 | Lab Sample ID: 680-32816-10

Matrix: Water | Lab File ID: s00419.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/19/2007 23:41

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

 VM 02/608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YSA14-FB01-121407
Lab Sample ID: 680-32816-11
Matrix: Water
Lab File ID: s00420.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/20/2007 00:03
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I OLM04.3/Vol

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YSA14-FB01-121407
Lab Sample ID: 680-32816-11
Matrix: Water
Lab File ID: s00420.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/20/2007 00:03
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-FB01-121407 | Lab Sample ID: 680-32816-11

Matrix: Water | Lab File ID: s00420.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 00:03

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW03-1207 | Lab Sample ID: 680-32816-12

Matrix: Water | Lab File ID: s00425.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 01:52

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YBKG-SW03-1207
Lab Sample ID: 680-32816-12
Matrix: Water
Lab File ID: s00425.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/20/2007 01:52
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

02/608

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW03-1207 | Lab Sample ID: 680-32816-12

Matrix: Water | Lab File ID: s00425.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 01:52

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YBKG-SW06-1207
Lab Sample ID: 680-32816-14
Matrix: Water
Lab File ID: s00426.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/20/2007 02:14
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: Rtx-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture:
Analy. Batch No.: 94298
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW06-1207 | Lab Sample ID: 680-32816-14

Matrix: Water | Lab File ID: s00426.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 02:14

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW06-1207 | Lab Sample ID: 680-32816-14

Matrix: Water | Lab File ID: s00426.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/20/2007 02:14

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: Rtx-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture:

Analy. Batch No.: 94298 | Units: ug/L

Number TICs Found: 1 | TIC Total: 5.4

CAS No.	Compound Name	RT	Result	Q
	Unknown	1.98	5.4	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW22-1207 | Lab Sample ID: 680-32687-2

Matrix: Water | Lab File ID: e7746.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 17:02

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U	9.4	9.4
108-60-1	2,2'-oxybis[1-chloropropane]	9.4	U	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U	9.4	9.4
95-48-7	2-Methylphenol	9.4	U	9.4	9.4
88-74-4	2-Nitroaniline	47	U	47	47
88-75-5	2-Nitrophenol	9.4	U	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	47	U	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U	9.4	9.4
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U	9.4	9.4
106-44-5	4-Methylphenol	9.4	U	9.4	9.4
100-01-6	4-Nitroaniline	47	U	47	47
100-02-7	4-Nitrophenol	47	U	47	47
83-32-9	Acenaphthene	9.4	U	9.4	9.4
208-96-8	Acenaphthylene	9.4	U	9.4	9.4
98-86-2	Acetophenone	9.4	U	9.4	9.4
120-12-7	Anthracene	9.4	U	9.4	9.4
1912-24-9	Atrazine	9.4	U	9.4	9.4
100-52-7	Benzaldehyde	9.4	U	9.4	9.4
56-55-3	Benzo[a]anthracene	9.4	U	9.4	9.4
50-32-8	Benzo[a]pyrene	9.4	U	9.4	9.4
205-99-2	Benzo[b]fluoranthene	9.4	U	9.4	9.4
191-24-2	Benzo[g,h,i]perylene	9.4	U	9.4	9.4
207-08-9	Benzo[k]fluoranthene	9.4	U	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW22-1207 | Lab Sample ID: 680-32687-2

Matrix: Water | Lab File ID: e7746.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 17:02

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.4	U	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U	9.4	9.4
105-60-2	Caprolactam	9.4	U	9.4	9.4
86-74-8	Carbazole	9.4	U	9.4	9.4
218-01-9	Chrysene	9.4	U	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U	9.4	9.4
132-64-9	Dibenzofuran	9.4	U	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U	9.4	9.4
206-44-0	Fluoranthene	9.4	U	9.4	9.4
86-73-7	Fluorene	9.4	U	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U	9.4	9.4
67-72-1	Hexachloroethane	9.4	U	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U	9.4	9.4
78-59-1	Isophorone	9.4	U	9.4	9.4
91-20-3	Naphthalene	9.4	U	9.4	9.4
98-95-3	Nitrobenzene	9.4	U	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U	9.4	9.4
87-86-5	Pentachlorophenol	47	U	47	47
85-01-8	Phenanthrene	9.4	U	9.4	9.4
108-95-2	Phenol	9.4	U	9.4	9.4
129-00-0	Pyrene	9.4	U	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW22-1207 | Lab Sample ID: 680-32687-2

Matrix: Water | Lab File ID: e7746.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 17:02

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 3 | TIC Total: 23.8

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	~~18~~	~~A~~ B, BL
112-80-1	Oleic Acid	9.58	~~3.6~~	~~N~~
	Unknown Organic Acid	9.71	~~2.2~~	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-EB01-121207 | Lab Sample ID: 680-32687-3

Matrix: Water | Lab File ID: e7745.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1020 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 16:37

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.8	U R 5/5L	9.8	9.8
108-60-1	2,2'-oxybis[1-chloropropane]	9.8	U	9.8	9.8
95-95-4	2,4,5-Trichlorophenol	9.8	U	9.8	9.8
88-06-2	2,4,6-Trichlorophenol	9.8	U	9.8	9.8
120-83-2	2,4-Dichlorophenol	9.8	U	9.8	9.8
105-67-9	2,4-Dimethylphenol	9.8	U	9.8	9.8
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.8	U	9.8	9.8
606-20-2	2,6-Dinitrotoluene	9.8	U	9.8	9.8
91-58-7	2-Chloronaphthalene	9.8	U	9.8	9.8
95-57-8	2-Chlorophenol	9.8	U	9.8	9.8
95-48-7	2-Methylphenol	9.8	U	9.8	9.8
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.8	U	9.8	9.8
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.8	U	9.8	9.8
59-50-7	4-Chloro-3-methylphenol	9.8	U	9.8	9.8
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	9.8	U	9.8	9.8
106-44-5	4-Methylphenol	9.8	U	9.8	9.8
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.8	U	9.8	9.8
208-96-8	Acenaphthylene	9.8	U	9.8	9.8
98-86-2	Acetophenone	9.8	U	9.8	9.8
120-12-7	Anthracene	9.8	U	9.8	9.8
1912-24-9	Atrazine	9.8	U	9.8	9.8
100-52-7	Benzaldehyde	9.8	U	9.8	9.8
56-55-3	Benzo[a]anthracene	9.8	U	9.8	9.8
50-32-8	Benzo[a]pyrene	9.8	U	9.8	9.8
205-99-2	Benzo[b]fluoranthene	9.8	U	9.8	9.8
191-24-2	Benzo[g,h,i]perylene	9.8	U	9.8	9.8
207-08-9	Benzo[k]fluoranthene	9.8	U	9.8	9.8

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-EB01-121207 | Lab Sample ID: 680-32687-3

Matrix: Water | Lab File ID: e7745.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1020 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 16:37

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.8	U R,SL	9.8	9.8
111-44-4	Bis(2-chloroethyl)ether	9.8	U	9.8	9.8
117-81-7	Bis(2-ethylhexyl) phthalate	9.8	U	9.8	9.8
85-68-7	Butyl benzyl phthalate	9.8	U	9.8	9.8
105-60-2	Caprolactam	9.8	U	9.8	9.8
86-74-8	Carbazole	9.8	U	9.8	9.8
218-01-9	Chrysene	9.8	U	9.8	9.8
53-70-3	Dibenz(a,h)anthracene	9.8	U	9.8	9.8
132-64-9	Dibenzofuran	9.8	U	9.8	9.8
84-66-2	Diethyl phthalate	9.8	U	9.8	9.8
131-11-3	Dimethyl phthalate	9.8	U	9.8	9.8
84-74-2	Di-n-butyl phthalate	9.8	U	9.8	9.8
117-84-0	Di-n-octyl phthalate	9.8	U	9.8	9.8
206-44-0	Fluoranthene	9.8	U	9.8	9.8
86-73-7	Fluorene	9.8	U	9.8	9.8
118-74-1	Hexachlorobenzene	9.8	U	9.8	9.8
87-68-3	Hexachlorobutadiene	9.8	U	9.8	9.8
77-47-4	Hexachlorocyclopentadiene	9.8	U	9.8	9.8
67-72-1	Hexachloroethane	9.8	U	9.8	9.8
193-39-5	Indeno[1,2,3-cd]pyrene	9.8	U	9.8	9.8
78-59-1	Isophorone	9.8	U	9.8	9.8
91-20-3	Naphthalene	9.8	U	9.8	9.8
98-95-3	Nitrobenzene	9.8	U	9.8	9.8
621-64-7	N-Nitrosodi-n-propylamine	9.8	U	9.8	9.8
86-30-6	N-Nitrosodiphenylamine	9.8	U	9.8	9.8
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.8	U	9.8	9.8
108-95-2	Phenol	9.8	U	9.8	9.8
129-00-0	Pyrene	9.8	U	9.8	9.8

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-EB01-121207 | Lab Sample ID: 680-32687-3

Matrix: Water | Lab File ID: e7745.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1020 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 16:37

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-EB01-121207 RE | Lab Sample ID: 680-32687-3 RE

Matrix: Water | Lab File ID: e7812a.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1030 (mL) | Date Extracted: 01/15/2008 13:10

Level: (low/med) Low | Date Analyzed: 01/16/2008 16:44

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 96030 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U H R,RE	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U H	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U H	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U H	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U H	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U H	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U H	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U H	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U H	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U H	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U H	9.7	9.7
95-48-7	2-Methylphenol	9.7	U H	9.7	9.7
88-74-4	2-Nitroaniline	49	U H	49	49
88-75-5	2-Nitrophenol	9.7	U H	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U H	19	19
99-09-2	3-Nitroaniline	49	U H	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U H	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U H	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U H	9.7	9.7
106-47-8	4-Chloroaniline	19	U H	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U H	9.7	9.7
106-44-5	4-Methylphenol	9.7	U H	9.7	9.7
100-01-6	4-Nitroaniline	49	U H	49	49
100-02-7	4-Nitrophenol	49	U H	49	49
83-32-9	Acenaphthene	9.7	U H	9.7	9.7
208-96-8	Acenaphthylene	9.7	U H	9.7	9.7
98-86-2	Acetophenone	9.7	U H	9.7	9.7
120-12-7	Anthracene	9.7	U H	9.7	9.7
1912-24-9	Atrazine	9.7	U H	9.7	9.7
100-52-7	Benzaldehyde	9.7	U H	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U H	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U H	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U H	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U H	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U H	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-EB01-121207 RE | Lab Sample ID: 680-32687-3 RE

Matrix: Water | Lab File ID: e7812a.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1030 (mL) | Date Extracted: 01/15/2008 13:10

Level: (low/med) Low | Date Analyzed: 01/16/2008 16:44

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 96030 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U H R,RE	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U H	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U H	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U H	9.7	9.7
105-60-2	Caprolactam	9.7	U H	9.7	9.7
86-74-8	Carbazole	9.7	U H	9.7	9.7
218-01-9	Chrysene	9.7	U H	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U H	9.7	9.7
132-64-9	Dibenzofuran	9.7	U H	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U H	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U H	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U H	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U H	9.7	9.7
206-44-0	Fluoranthene	9.7	U H	9.7	9.7
86-73-7	Fluorene	9.7	U H	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U H	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U H	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U H	9.7	9.7
67-72-1	Hexachloroethane	9.7	U H	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U H	9.7	9.7
78-59-1	Isophorone	9.7	U H	9.7	9.7
91-20-3	Naphthalene	9.7	U H	9.7	9.7
98-95-3	Nitrobenzene	9.7	U H	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U H	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U H	9.7	9.7
87-86-5	Pentachlorophenol	49	U H	49	49
85-01-8	Phenanthrene	9.7	U H	9.7	9.7
108-95-2	Phenol	9.7	U H	9.7	9.7
129-00-0	Pyrene	9.7	U H	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-EB01-121207 RE | Lab Sample ID: 680-32687-3 RE

Matrix: Water | Lab File ID: e7812a.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1030 (mL) | Date Extracted: 01/15/2008 13:10

Level: (low/med) Low | Date Analyzed: 01/16/2008 16:44

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 96030 | Units: ug/L

Number TICs Found: 2 | TIC Total: 23

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.52	20	H A
791-28-6	Phosphine oxide, triphenyl-	10.87	3.0	H N

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW21-1207 | Lab Sample ID: 680-32687-4

Matrix: Water | Lab File ID: e7747.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 17:26

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW21-1207 | Lab Sample ID: 680-32687-4

Matrix: Water | Lab File ID: e7747.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 17:26

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS12-GW21-1207 | Lab Sample ID: 680-32687-4

Matrix: Water | Lab File ID: e7747.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 17:26

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 1 | TIC Total: 4.3

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	4.3	A B,BL

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS22-SW04-1207
Lab Sample ID: 680-32714-1
Matrix: Water
Lab File ID: e7748.d
Analysis Method: OLM04.3/SV
Date Received: 12/13/2007 09:43
Sample wt/vol: 1060 (mL)
Date Extracted: 12/18/2007 15:30
Level: (low/med) Low
Date Analyzed: 01/13/2008 17:51
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95982
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U R SL	9.4	9.4
108-60-1	2,2'-oxybis[1-chloropropane]	9.4	U	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U	9.4	9.4
95-48-7	2-Methylphenol	9.4	U	9.4	9.4
88-74-4	2-Nitroaniline	47	U	47	47
88-75-5	2-Nitrophenol	9.4	U	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	47	U	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U	9.4	9.4
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U	9.4	9.4
106-44-5	4-Methylphenol	9.4	U	9.4	9.4
100-01-6	4-Nitroaniline	47	U	47	47
100-02-7	4-Nitrophenol	47	U	47	47
83-32-9	Acenaphthene	9.4	U	9.4	9.4
208-96-8	Acenaphthylene	9.4	U	9.4	9.4
98-86-2	Acetophenone	9.4	U	9.4	9.4
120-12-7	Anthracene	9.4	U	9.4	9.4
1912-24-9	Atrazine	9.4	U	9.4	9.4
100-52-7	Benzaldehyde	9.4	U	9.4	9.4
56-55-3	Benzo[a]anthracene	9.4	U	9.4	9.4
50-32-8	Benzo[a]pyrene	9.4	U	9.4	9.4
205-99-2	Benzo[b]fluoranthene	9.4	U	9.4	9.4
191-24-2	Benzo[g,h,i]perylene	9.4	U	9.4	9.4
207-08-9	Benzo[k]fluoranthene	9.4	U	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW04-1207 | Lab Sample ID: 680-32714-1

Matrix: Water | Lab File ID: e7748.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 17:51

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.4	U R, SSL	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U	9.4	9.4
105-60-2	Caprolactam	9.4	U	9.4	9.4
86-74-8	Carbazole	9.4	U	9.4	9.4
218-01-9	Chrysene	9.4	U	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U	9.4	9.4
132-64-9	Dibenzofuran	9.4	U	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U	9.4	9.4
206-44-0	Fluoranthene	9.4	U	9.4	9.4
86-73-7	Fluorene	9.4	U	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U	9.4	9.4
67-72-1	Hexachloroethane	9.4	U	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U	9.4	9.4
78-59-1	Isophorone	9.4	U	9.4	9.4
91-20-3	Naphthalene	9.4	U	9.4	9.4
98-95-3	Nitrobenzene	9.4	U	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U	9.4	9.4
87-86-5	Pentachlorophenol	47	U	47	47
85-01-8	Phenanthrene	9.4	U	9.4	9.4
108-95-2	Phenol	9.4	U	9.4	9.4
129-00-0	Pyrene	9.4	U	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW04-1207 | Lab Sample ID: 680-32714-1

Matrix: Water | Lab File ID: e7748.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 17:51

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 2 | TIC Total: 6.2

CAS No.	Compound Name	RT	Result	Q
112-80-1	Oleic Acid	9.58	4.0	N
	Unknown	9.71	2.2	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW04-1207 RE | Lab Sample ID: 680-32714-1 RE

Matrix: Water | Lab File ID: e7813a.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 01/15/2008 13:10

Level: (low/med) Low | Date Analyzed: 01/16/2008 17:08

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 96030 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U H	9.4	9.4
108-60-1	2,2'-oxybis[1-chloropropane]	9.4	U H	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U H	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U H	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U H	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U H	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U H	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U H	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U H	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U H	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U H	9.4	9.4
95-48-7	2-Methylphenol	9.4	U H	9.4	9.4
88-74-4	2-Nitroaniline	47	U H	47	47
88-75-5	2-Nitrophenol	9.4	U H	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U H	19	19
99-09-2	3-Nitroaniline	47	U H	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U H	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U H	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U H	9.4	9.4
106-47-8	4-Chloroaniline	19	U H	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U H	9.4	9.4
106-44-5	4-Methylphenol	9.4	U H	9.4	9.4
100-01-6	4-Nitroaniline	47	U H	47	47
100-02-7	4-Nitrophenol	47	U H	47	47
83-32-9	Acenaphthene	9.4	U H	9.4	9.4
208-96-8	Acenaphthylene	9.4	U H	9.4	9.4
98-86-2	Acetophenone	9.4	U H	9.4	9.4
120-12-7	Anthracene	9.4	U H	9.4	9.4
1912-24-9	Atrazine	9.4	U H	9.4	9.4
100-52-7	Benzaldehyde	9.4	U H	9.4	9.4
56-55-3	Benzo[a]anthracene	9.4	U H	9.4	9.4
50-32-8	Benzo[a]pyrene	9.4	U H	9.4	9.4
205-99-2	Benzo[b]fluoranthene	9.4	U H	9.4	9.4
191-24-2	Benzo[g,h,i]perylene	9.4	U H	9.4	9.4
207-08-9	Benzo[k]fluoranthene	9.4	U H	9.4	9.4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW04-1207 RE | Lab Sample ID: 680-32714-1 RE

Matrix: Water | Lab File ID: e7813a.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 01/15/2008 13:10

Level: (low/med) Low | Date Analyzed: 01/16/2008 17:08

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 96030 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.4	U H	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U H	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U H	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U H	9.4	9.4
105-60-2	Caprolactam	9.4	U H	9.4	9.4
86-74-8	Carbazole	9.4	U H	9.4	9.4
218-01-9	Chrysene	9.4	U H	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U H	9.4	9.4
132-64-9	Dibenzofuran	9.4	U H	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U H	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U H	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U H	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U H	9.4	9.4
206-44-0	Fluoranthene	9.4	U H	9.4	9.4
86-73-7	Fluorene	9.4	U H	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U H	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U H	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U H	9.4	9.4
67-72-1	Hexachloroethane	9.4	U H	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U H	9.4	9.4
78-59-1	Isophorone	9.4	U H	9.4	9.4
91-20-3	Naphthalene	9.4	U H	9.4	9.4
98-95-3	Nitrobenzene	9.4	U H	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U H	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U H	9.4	9.4
87-86-5	Pentachlorophenol	47	U H	47	47
85-01-8	Phenanthrene	9.4	U H	9.4	9.4
108-95-2	Phenol	9.4	U H	9.4	9.4
129-00-0	Pyrene	9.4	U H	9.4	9.4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW04-1207 RE | Lab Sample ID: 680-32714-1 RE

Matrix: Water | Lab File ID: e7813a.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 01/15/2008 13:10

Level: (low/med) Low | Date Analyzed: 01/16/2008 17:08

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 96030 | Units: ug/L

Number TICs Found: 3 | TIC Total: 42.5

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.51	~~29~~	H A R RE
112-80-1	Oleic Acid	9.55	~~11~~	~~H N~~
791-28-6	Phosphine oxide, triphenyl-	10.86	~~2.5~~	~~H N~~

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW05-1207 | Lab Sample ID: 680-32714-3

Matrix: Water | Lab File ID: e7749.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1040 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 18:16

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.6	U	9.6	9.6
108-60-1	2,2'-oxybis[1-chloropropane]	9.6	U	9.6	9.6
95-95-4	2,4,5-Trichlorophenol	9.6	U	9.6	9.6
88-06-2	2,4,6-Trichlorophenol	9.6	U	9.6	9.6
120-83-2	2,4-Dichlorophenol	9.6	U	9.6	9.6
105-67-9	2,4-Dimethylphenol	9.6	U	9.6	9.6
51-28-5	2,4-Dinitrophenol	48	U	48	48
121-14-2	2,4-Dinitrotoluene	9.6	U	9.6	9.6
606-20-2	2,6-Dinitrotoluene	9.6	U	9.6	9.6
91-58-7	2-Chloronaphthalene	9.6	U	9.6	9.6
95-57-8	2-Chlorophenol	9.6	U	9.6	9.6
95-48-7	2-Methylphenol	9.6	U	9.6	9.6
88-74-4	2-Nitroaniline	48	U	48	48
88-75-5	2-Nitrophenol	9.6	U	9.6	9.6
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	48	U	48	48
534-52-1	4,6-Dinitro-2-methylphenol	48	U	48	48
101-55-3	4-Bromophenyl phenyl ether	9.6	U	9.6	9.6
59-50-7	4-Chloro-3-methylphenol	9.6	U	9.6	9.6
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.6	U	9.6	9.6
106-44-5	4-Methylphenol	9.6	U	9.6	9.6
100-01-6	4-Nitroaniline	48	U	48	48
100-02-7	4-Nitrophenol	48	U	48	48
83-32-9	Acenaphthene	9.6	U	9.6	9.6
208-96-8	Acenaphthylene	9.6	U	9.6	9.6
98-86-2	Acetophenone	9.6	U	9.6	9.6
120-12-7	Anthracene	9.6	U	9.6	9.6
1912-24-9	Atrazine	9.6	U	9.6	9.6
100-52-7	Benzaldehyde	9.6	U	9.6	9.6
56-55-3	Benzo[a]anthracene	9.6	U	9.6	9.6
50-32-8	Benzo[a]pyrene	9.6	U	9.6	9.6
205-99-2	Benzo[b]fluoranthene	9.6	U	9.6	9.6
191-24-2	Benzo[g,h,i]perylene	9.6	U	9.6	9.6
207-08-9	Benzo[k]fluoranthene	9.6	U	9.6	9.6

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW05-1207 | Lab Sample ID: 680-32714-3

Matrix: Water | Lab File ID: e7749.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1040 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 18:16

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.6	U	9.6	9.6
111-44-4	Bis(2-chloroethyl)ether	9.6	U	9.6	9.6
117-81-7	Bis(2-ethylhexyl) phthalate	9.6	U	9.6	9.6
85-68-7	Butyl benzyl phthalate	9.6	U	9.6	9.6
105-60-2	Caprolactam	9.6	U	9.6	9.6
86-74-8	Carbazole	9.6	U	9.6	9.6
218-01-9	Chrysene	9.6	U	9.6	9.6
53-70-3	Dibenz(a,h)anthracene	9.6	U	9.6	9.6
132-64-9	Dibenzofuran	9.6	U	9.6	9.6
84-66-2	Diethyl phthalate	9.6	U	9.6	9.6
131-11-3	Dimethyl phthalate	9.6	U	9.6	9.6
84-74-2	Di-n-butyl phthalate	9.6	U	9.6	9.6
117-84-0	Di-n-octyl phthalate	9.6	U	9.6	9.6
206-44-0	Fluoranthene	9.6	U	9.6	9.6
86-73-7	Fluorene	9.6	U	9.6	9.6
118-74-1	Hexachlorobenzene	9.6	U	9.6	9.6
87-68-3	Hexachlorobutadiene	9.6	U	9.6	9.6
77-47-4	Hexachlorocyclopentadiene	9.6	U	9.6	9.6
67-72-1	Hexachloroethane	9.6	U	9.6	9.6
193-39-5	Indeno[1,2,3-cd]pyrene	9.6	U	9.6	9.6
78-59-1	Isophorone	9.6	U	9.6	9.6
91-20-3	Naphthalene	9.6	U	9.6	9.6
98-95-3	Nitrobenzene	9.6	U	9.6	9.6
621-64-7	N-Nitrosodi-n-propylamine	9.6	U	9.6	9.6
86-30-6	N-Nitrosodiphenylamine	9.6	U	9.6	9.6
87-86-5	Pentachlorophenol	48	U	48	48
85-01-8	Phenanthrene	9.6	U	9.6	9.6
108-95-2	Phenol	9.6	U	9.6	9.6
129-00-0	Pyrene	9.6	U	9.6	9.6

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW05-1207 | Lab Sample ID: 680-32714-3

Matrix: Water | Lab File ID: e7749.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1040 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 18:16

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 5 | TIC Total: 36.4

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.54	~~21~~	~~A~~ B,B2
	Unknown	5.37	2.2	
112-80-1	Oleic Acid	9.58	~~5.4~~	~~N~~ B,B2
	Unknown Organic Acid	9.71	~~5.0~~	B,B2
123-95-5	Octadecanoic acid, butyl ester	10.28	2.8	N

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW06-1207 | Lab Sample ID: 680-32714-5

Matrix: Water | Lab File ID: e7750.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1040 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 18:41

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.6	U	9.6	9.6
108-60-1	2,2'-oxybis[1-chloropropane]	9.6	U	9.6	9.6
95-95-4	2,4,5-Trichlorophenol	9.6	U	9.6	9.6
88-06-2	2,4,6-Trichlorophenol	9.6	U	9.6	9.6
120-83-2	2,4-Dichlorophenol	9.6	U	9.6	9.6
105-67-9	2,4-Dimethylphenol	9.6	U	9.6	9.6
51-28-5	2,4-Dinitrophenol	48	U	48	48
121-14-2	2,4-Dinitrotoluene	9.6	U	9.6	9.6
606-20-2	2,6-Dinitrotoluene	9.6	U	9.6	9.6
91-58-7	2-Chloronaphthalene	9.6	U	9.6	9.6
95-57-8	2-Chlorophenol	9.6	U	9.6	9.6
95-48-7	2-Methylphenol	9.6	U	9.6	9.6
88-74-4	2-Nitroaniline	48	U	48	48
88-75-5	2-Nitrophenol	9.6	U	9.6	9.6
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	48	U	48	48
534-52-1	4,6-Dinitro-2-methylphenol	48	U	48	48
101-55-3	4-Bromophenyl phenyl ether	9.6	U	9.6	9.6
59-50-7	4-Chloro-3-methylphenol	9.6	U	9.6	9.6
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.6	U	9.6	9.6
106-44-5	4-Methylphenol	9.6	U	9.6	9.6
100-01-6	4-Nitroaniline	48	U	48	48
100-02-7	4-Nitrophenol	48	U	48	48
83-32-9	Acenaphthene	9.6	U	9.6	9.6
208-96-8	Acenaphthylene	9.6	U	9.6	9.6
98-86-2	Acetophenone	9.6	U	9.6	9.6
120-12-7	Anthracene	9.6	U	9.6	9.6
1912-24-9	Atrazine	9.6	U	9.6	9.6
100-52-7	Benzaldehyde	9.6	U	9.6	9.6
56-55-3	Benzo[a]anthracene	9.6	U	9.6	9.6
50-32-8	Benzo[a]pyrene	9.6	U	9.6	9.6
205-99-2	Benzo[b]fluoranthene	9.6	U	9.6	9.6
191-24-2	Benzo[g,h,i]perylene	9.6	U	9.6	9.6
207-08-9	Benzo[k]fluoranthene	9.6	U	9.6	9.6

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS22-SW06-1207
Lab Sample ID: 680-32714-5
Matrix: Water
Lab File ID: e7750.d
Analysis Method: OLM04.3/SV
Date Received: 12/13/2007 09:43
Sample wt/vol: 1040 (mL)
Date Extracted: 12/18/2007 15:30
Level: (low/med) Low
Date Analyzed: 01/13/2008 18:41
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95982
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.6	U	9.6	9.6
111-44-4	Bis(2-chloroethyl)ether	9.6	U	9.6	9.6
117-81-7	Bis(2-ethylhexyl) phthalate	9.6	U	9.6	9.6
85-68-7	Butyl benzyl phthalate	9.6	U	9.6	9.6
105-60-2	Caprolactam	9.6	U	9.6	9.6
86-74-8	Carbazole	9.6	U	9.6	9.6
218-01-9	Chrysene	9.6	U	9.6	9.6
53-70-3	Dibenz(a,h)anthracene	9.6	U	9.6	9.6
132-64-9	Dibenzofuran	9.6	U	9.6	9.6
84-66-2	Diethyl phthalate	9.6	U	9.6	9.6
131-11-3	Dimethyl phthalate	9.6	U	9.6	9.6
84-74-2	Di-n-butyl phthalate	9.6	U	9.6	9.6
117-84-0	Di-n-octyl phthalate	9.6	U	9.6	9.6
206-44-0	Fluoranthene	9.6	U	9.6	9.6
86-73-7	Fluorene	9.6	U	9.6	9.6
118-74-1	Hexachlorobenzene	9.6	U	9.6	9.6
87-68-3	Hexachlorobutadiene	9.6	U	9.6	9.6
77-47-4	Hexachlorocyclopentadiene	9.6	U	9.6	9.6
67-72-1	Hexachloroethane	9.6	U	9.6	9.6
193-39-5	Indeno[1,2,3-cd]pyrene	9.6	U	9.6	9.6
78-59-1	Isophorone	9.6	U	9.6	9.6
91-20-3	Naphthalene	9.6	U	9.6	9.6
98-95-3	Nitrobenzene	9.6	U	9.6	9.6
621-64-7	N-Nitrosodi-n-propylamine	9.6	U	9.6	9.6
86-30-6	N-Nitrosodiphenylamine	9.6	U	9.6	9.6
87-86-5	Pentachlorophenol	48	U	48	48
85-01-8	Phenanthrene	9.6	U	9.6	9.6
108-95-2	Phenol	9.6	U	9.6	9.6
129-00-0	Pyrene	9.6	U	9.6	9.6

VB 82608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-SW06-1207 | Lab Sample ID: 680-32714-5

Matrix: Water | Lab File ID: e7750.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1040 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 18:41

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 2 | TIC Total: 20.5

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	18	A B,BL
112-80-1	Oleic Acid	9.58	2.5	N B,BL

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-EB01-121207 | Lab Sample ID: 680-32714-8

Matrix: Water | Lab File ID: e7751.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 19:06

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U	9.4	9.4
108-60-1	2,2'-oxybis[1-chloropropane]	9.4	U	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U	9.4	9.4
95-48-7	2-Methylphenol	9.4	U	9.4	9.4
88-74-4	2-Nitroaniline	47	U	47	47
88-75-5	2-Nitrophenol	9.4	U	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	47	U	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U	9.4	9.4
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U	9.4	9.4
106-44-5	4-Methylphenol	9.4	U	9.4	9.4
100-01-6	4-Nitroaniline	47	U	47	47
100-02-7	4-Nitrophenol	47	U	47	47
83-32-9	Acenaphthene	9.4	U	9.4	9.4
208-96-8	Acenaphthylene	9.4	U	9.4	9.4
98-86-2	Acetophenone	9.4	U	9.4	9.4
120-12-7	Anthracene	9.4	U	9.4	9.4
1912-24-9	Atrazine	9.4	U	9.4	9.4
100-52-7	Benzaldehyde	9.4	U	9.4	9.4
56-55-3	Benzo[a]anthracene	9.4	U	9.4	9.4
50-32-8	Benzo[a]pyrene	9.4	U	9.4	9.4
205-99-2	Benzo[b]fluoranthene	9.4	U	9.4	9.4
191-24-2	Benzo[g,h,i]perylene	9.4	U	9.4	9.4
207-08-9	Benzo[k]fluoranthene	9.4	U	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS22-EB01-121207 | Lab Sample ID: 680-32714-8

Matrix: Water | Lab File ID: e7751.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 19:06

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.4	U	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U	9.4	9.4
105-60-2	Caprolactam	9.4	U	9.4	9.4
86-74-8	Carbazole	9.4	U	9.4	9.4
218-01-9	Chrysene	9.4	U	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U	9.4	9.4
132-64-9	Dibenzofuran	9.4	U	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U	9.4	9.4
206-44-0	Fluoranthene	9.4	U	9.4	9.4
86-73-7	Fluorene	9.4	U	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U	9.4	9.4
67-72-1	Hexachloroethane	9.4	U	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U	9.4	9.4
78-59-1	Isophorone	9.4	U	9.4	9.4
91-20-3	Naphthalene	9.4	U	9.4	9.4
98-95-3	Nitrobenzene	9.4	U	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U	9.4	9.4
87-86-5	Pentachlorophenol	47	U	47	47
85-01-8	Phenanthrene	9.4	U	9.4	9.4
108-95-2	Phenol	9.4	U	9.4	9.4
129-00-0	Pyrene	9.4	U	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS22-EB01-121207
Lab Sample ID: 680-32714-8
Matrix: Water
Lab File ID: e7751.d
Analysis Method: OLM04.3/SV
Date Received: 12/13/2007 09:43
Sample wt/vol: 1060 (mL)
Date Extracted: 12/18/2007 15:30
Level: (low/med) Low
Date Analyzed: 01/13/2008 19:06
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95982
Units: ug/L
Number TICs Found: 2
TIC Total: 19.1

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	17	A
112-80-1	Oleic Acid	9.58	2.1	N

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GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-SW02-1207 | Lab Sample ID: 680-32771-1

Matrix: Water | Lab File ID: e7752.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 19:31

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-SW02-1207 | Lab Sample ID: 680-32771-1

Matrix: Water | Lab File ID: e7752.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 19:31

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-SW02-1207 | Lab Sample ID: 680-32771-1

Matrix: Water | Lab File ID: e7752.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 19:31

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 4 | TIC Total: 30

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	~~19~~	~~A~~ B,P2
112-80-1	Oleic Acid	9.58	~~2.3~~	~~N~~ B,P2
0-00-0	Butyl hexadecanoate	9.71	5.4	N
123-95-5	Octadecanoic acid, butyl ester	10.28	~~3.3~~	~~N~~ B,P2

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW04-1207 | Lab Sample ID: 680-32771-3

Matrix: Water | Lab File ID: e7753.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol; 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 19:56

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U	9.4	9.4
108-60-1	2,2'-oxybis[1-chloropropane]	9.4	U	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U	9.4	9.4
95-48-7	2-Methylphenol	9.4	U	9.4	9.4
88-74-4	2-Nitroaniline	47	U	47	47
88-75-5	2-Nitrophenol	9.4	U	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	47	U	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U	9.4	9.4
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U	9.4	9.4
106-44-5	4-Methylphenol	9.4	U	9.4	9.4
100-01-6	4-Nitroaniline	47	U	47	47
100-02-7	4-Nitrophenol	47	U	47	47
83-32-9	Acenaphthene	9.4	U	9.4	9.4
208-96-8	Acenaphthylene	9.4	U	9.4	9.4
98-86-2	Acetophenone	9.4	U	9.4	9.4
120-12-7	Anthracene	9.4	U	9.4	9.4
1912-24-9	Atrazine	9.4	U	9.4	9.4
100-52-7	Benzaldehyde	9.4	U	9.4	9.4
56-55-3	Benzo[a]anthracene	9.4	U	9.4	9.4
50-32-8	Benzo[a]pyrene	9.4	U	9.4	9.4
205-99-2	Benzo[b]fluoranthene	9.4	U	9.4	9.4
191-24-2	Benzo[g,h,i]perylene	9.4	U	9.4	9.4
207-08-9	Benzo[k]fluoranthene	9.4	U	9.4	9.4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YS08-SW04-1207
Lab Sample ID: 680-32771-3
Matrix: Water
Lab File ID: e7753.d
Analysis Method: OLM04.3/SV
Date Received: 12/14/2007 09:20
Sample wt/vol: 1060 (mL)
Date Extracted: 12/18/2007 15:30
Level: (low/med) Low
Date Analyzed: 01/13/2008 19:56
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95982
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.4	U	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U	9.4	9.4
105-60-2	Caprolactam	9.4	U	9.4	9.4
86-74-8	Carbazole	9.4	U	9.4	9.4
218-01-9	Chrysene	9.4	U	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U	9.4	9.4
132-64-9	Dibenzofuran	9.4	U	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U	9.4	9.4
206-44-0	Fluoranthene	9.4	U	9.4	9.4
86-73-7	Fluorene	9.4	U	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U	9.4	9.4
67-72-1	Hexachloroethane	9.4	U	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U	9.4	9.4
78-59-1	Isophorone	9.4	U	9.4	9.4
91-20-3	Naphthalene	9.4	U	9.4	9.4
98-95-3	Nitrobenzene	9.4	U	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U	9.4	9.4
87-86-5	Pentachlorophenol	47	U	47	47
85-01-8	Phenanthrene	9.4	U	9.4	9.4
108-95-2	Phenol	9.4	U	9.4	9.4
129-00-0	Pyrene	9.4	U	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW04-1207 | Lab Sample ID: 680-32771-3

Matrix: Water | Lab File ID: e7753.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 19:56

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 4 | TIC Total: 30.8

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.54	~~19~~	A B,B2
112-80-1	Oleic Acid	9.58	~~2.0~~	N
	Unknown Organic Acid	9.71	~~6.0~~	
123-95-5	Octadecanoic acid, butyl ester	10.28	3.8	N

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GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW03-1207 | Lab Sample ID: 680-32771-5

Matrix: Water | Lab File ID: e7786.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 12:56

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: 2 (uL) | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW03-1207 | Lab Sample ID: 680-32771-5

Matrix: Water | Lab File ID: e7786.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 12:56

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: 2 (uL) | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW03-1207 | Lab Sample ID: 680-32771-5

Matrix: Water | Lab File ID: e7786.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 12:56

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: 2 (uL) | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

Number TICs Found: 11 | TIC Total: 101.5

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~19~~	~~A~~ B,B2
112-80-1	Oleic Acid	9.58	~~3.9~~	~~N~~ B,B2
	Unknown	9.70	9.6	
123-95-5	Octadecanoic acid, butyl ester	10.27	5.5	N
646-31-1	Tetracosane	10.30	2.1	N
112-95-8	Eicosane	10.58	2.9	N
	Unknown Organic Acid	10.90	50	
7225-66-3	Tridecane, 7-hexyl-	11.14	2.0	N
544-76-3	Hexadecane	11.45	2.1	N
629-99-2	Pentacosane	11.79	1.9	N
	Unknown	14.75	2.5	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW02-1207 | Lab Sample ID: 680-32771-7

Matrix: Water | Lab File ID: e7792.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/19/2007 15:50

Level: (low/med) Low | Date Analyzed: 01/14/2008 15:24

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW02-1207 | Lab Sample ID: 680-32771-7

Matrix: Water | Lab File ID: e7792.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/19/2007 15:50

Level: (low/med) Low | Date Analyzed: 01/14/2008 15:24

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-SW02-1207 | Lab Sample ID: 680-32771-7

Matrix: Water | Lab File ID: e7792.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/19/2007 15:50

Level: (low/med) Low | Date Analyzed: 01/14/2008 15:24

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

Number TICs Found: 9 | TIC Total: 96.7

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~26~~	~~A~~ B, BL
	Unknown	4.37	2.1	
5989-27-5	D-Limonene	4.93	5.0	N
	Unknown	5.35	2.4	
473-15-4	2-Naphthalenemethanol, decahydro-.alpha.	8.07	1.9	N
	Unknown	9.69	8.2	
123-95-5	Octadecanoic acid, butyl ester	10.27	~~7.0~~	N B, BL
5717-37-3	(Carbethoxyethylidine)triphenylphosphora	10.90	42	N
6703-81-7	Heneicosane, 11-cyclopentyl-	13.07	2.1	N

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-EB01-121307 | Lab Sample ID: 680-32771-9

Matrix: Water | Lab File ID: e7755.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 20:46

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-EB01-121307 | Lab Sample ID: 680-32771-9

Matrix: Water | Lab File ID: e7755.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 20:46

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS08-EB01-121307 | Lab Sample ID: 680-32771-9

Matrix: Water | Lab File ID: e7755.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 20:46

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 3 | TIC Total: 26.3

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	19	A
112-80-1	Oleic Acid	9.58	2.8	N
	Unknown Organic Acid	9.71	4.5	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-FB01-121307 | Lab Sample ID: 680-32771-11

Matrix: Water | Lab File ID: e7756.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 21:10

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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UMB21608

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-FB01-121307 | Lab Sample ID: 680-32771-11

Matrix: Water | Lab File ID: e7756.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 21:10

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

02/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YS04-FB01-121307 | Lab Sample ID: 680-32771-11

Matrix: Water | Lab File ID: e7756.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 21:10

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 3 | TIC Total: 20.5

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	14	A
112-80-1	Oleic Acid	9.58	2.0	N
	Unknown Organic Acid	9.71	4.5	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW05-1207 | Lab Sample ID: 680-32816-1

Matrix: Water | Lab File ID: e7757.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 21:35

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW05-1207 | Lab Sample ID: 680-32816-1

Matrix: Water | Lab File ID: e7757.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 21:35

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW05-1207 | Lab Sample ID: 680-32816-1

Matrix: Water | Lab File ID: e7757.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 21:35

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Vol.: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 4 | TIC Total: 36.2

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.54	~~18~~	A B,BL
112-80-1	Oleic Acid	9.58	~~6.1~~	N
	Unknown Organic Acid	9.71	~~7.6~~	
123-95-5	Octadecanoic acid, butyl ester	10.28	4.5	N

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW02-1207 | Lab Sample ID: 680-32816-3

Matrix: Water | Lab File ID: e7758.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 22:00

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Te[illegible]rica Savannah — Job No.: 680-32687-1

SDG No.: YORK[illegible]

Client Sample [illegible]: YSA14-SW02-1207 — Lab Sample ID: 680-32816-3

Matrix: Water — Lab File ID: e7758.d

Analysis Meth[illegible]: OLM04.3/SV — Date Received: 12/15/2007 10:11

Sample wt/vol: [illegible]0 (mL) — Date Extracted: 12/18/2007 15:30

Level: (low/[illegible]): Low — Date Analyzed: 01/13/2008 22:00

Con. Extract [illegible]: 1 (mL) — Dilution Factor: 1

Injection Vol[illegible] — Extract. Method: OLM04.3/SV

GPC Cleanup: [illegible]N — % Moisture:

Analy. Batch: [illegible]5982 — Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	[illegible]-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	[illegible]-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	[illegible]-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	[illegible] benzyl phthalate	9.7	U	9.7	9.7
105-60-2	[illegible]lactam	9.7	U	9.7	9.7
86-74-8	[illegible]azole	9.7	U	9.7	9.7
218-01-9	[illegible]ene	9.7	U	9.7	9.7
53-70-3	[illegible]z(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	[illegible]zofuran	9.7	U	9.7	9.7
84-66-2	[illegible]yl phthalate	9.7	U	9.7	9.7
131-11-3	[illegible]hyl phthalate	9.7	U	9.7	9.7
84-74-2	[illegible]-butyl phthalate	9.7	U	9.7	9.7
117-84-0	[illegible]octyl phthalate	9.7	U	9.7	9.7
206-44-0	[illegible]anthene	9.7	U	9.7	9.7
86-73-7	[illegible]ene	9.7	U	9.7	9.7
118-74-1	[illegible]hlorobenzene	9.7	U	9.7	9.7
87-68-3	[illegible]hlorobutadiene	9.7	U	9.7	9.7
77-47-4	[illegible]hlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	[illegible]hloroethane	9.7	U	9.7	9.7
193-39-5	[illegible]o[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	[illegible]orone	9.7	U	9.7	9.7
91-20-3	[illegible]halene	9.7	U	9.7	9.7
98-95-3	[illegible]benzene	9.7	U	9.7	9.7
621-64-7	[illegible]osodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	[illegible]osodiphenylamine	9.7	U	9.7	9.7
87-86-5	[illegible]hlorophenol	49	U	49	49
85-01-8	[illegible]nthrene	9.7	U	9.7	9.7
108-95-2	[illegible]	9.7	U	9.7	9.7
129-00-0	[illegible]	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Test	ica Savannah	Job No.:	680-32687-1
SDG No.: YORK			
Client Sample	YSA14-SW02-1207	Lab Sample ID:	680-32816-3
Matrix: Water		Lab File ID:	e7758.d
Analysis Meth	LM04.3/SV	Date Received:	12/15/2007 10:11
Sample wt/v	(mL)	Date Extracted:	12/18/2007 15:30
Level: (lo	ow	Date Analyzed:	01/13/2008 22:00
Con. Extra	1 (mL)	Dilution Factor:	1
Injection		Extract. Method:	OLM04.3/SV
GPC Cleanup	N	% Moisture:	
Analy. Bat	5982	Units:	ug/L
Number TIC	3	TIC Total:	27.8

CAS No.	Compound Name	RT	Result	Q
	wn Aldol Condensate	3.54	~~22~~	A ~~B,BL~~
	wn	9.71	~~3.7~~	~~B,BL~~
123-95-5	canoic acid, butyl ester	10.28	~~2.1~~	N ~~B,BL~~

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Test[illegible]rica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-SW03-1207 | Lab Sample ID: 680-32816-5

Matrix: Water | Lab File ID: e7759.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: [illegible]0 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med): Low | Date Analyzed: 01/13/2008 22:25

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup: (Y/N) N | % Moisture:

Analy. Batch: [illegible]5982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	[illegible]-Biphenyl	9.7	U	9.7	9.7
108-60-1	[illegible]-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	[illegible]-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	[illegible]-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	[illegible]chlorophenol	9.7	U	9.7	9.7
105-67-9	[illegible]imethylphenol	9.7	U	9.7	9.7
51-28-5	[illegible]initrophenol	49	U	49	49
121-14-2	[illegible]nitrotoluene	9.7	U	9.7	9.7
606-20-2	[illegible]initrotoluene	9.7	U	9.7	9.7
91-58-7	[illegible]ronaphthalene	9.7	U	9.7	9.7
95-57-8	[illegible]rophenol	9.7	U	9.7	9.7
95-48-7	[illegible]ylphenol	9.7	U	9.7	9.7
88-74-4	[illegible]roaniline	49	U	49	49
88-75-5	[illegible]rophenol	9.7	U	9.7	9.7
91-94-1	[illegible]Dichlorobenzidine	19	U	19	19
99-09-2	[illegible]roaniline	49	U	49	49
534-52-1	[illegible]Nitro-2-methylphenol	49	U	49	49
101-55-3	[illegible]ophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	[illegible]ro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	[illegible]roaniline	19	U	19	19
7005-72-3	[illegible]rophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	[illegible]ylphenol	9.7	U	9.7	9.7
100-01-6	[illegible]roaniline	49	U	49	49
100-02-7	[illegible]rophenol	49	U	49	49
83-32-9	[illegible]hthene	9.7	U	9.7	9.7
208-96-8	[illegible]hthylene	9.7	U	9.7	9.7
98-86-2	[illegible]henone	9.7	U	9.7	9.7
120-12-7	[illegible]cene	9.7	U	9.7	9.7
1912-24-9	[illegible]ine	9.7	U	9.7	9.7
100-52-7	[illegible]dehyde	9.7	U	9.7	9.7
56-55-3	[illegible][a]anthracene	9.7	U	9.7	9.7
50-32-8	[illegible][a]pyrene	9.7	U	9.7	9.7
205-99-2	[illegible][b]fluoranthene	9.7	U	9.7	9.7
191-24-2	[illegible][g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	[illegible][k]fluoranthene	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Test	ica Savannah	Job No.: 680-32687-1	
SDG No.: YDNM1			
Client Sample	SA14-SW03-1207	Lab Sample ID: 680-32816-5	
Matrix: Wa		Lab File ID: e7759.d	
Analysis Meth	M04.3/SV	Date Received: 12/15/2007 10:11	
Sample wt/vol:	(mL)	Date Extracted: 12/18/2007 15:30	
Level: (low	w	Date Analyzed: 01/13/2008 22:25	
Con. Extra	1 (mL)	Dilution Factor: 1	
Injection		Extract. Method: OLM04.3/SV	
GPC Cleanu		% Moisture:	
Analy. Batch	5982	Units: ug/L	

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	benzyl phthalate	9.7	U	9.7	9.7
105-60-2	actam	9.7	U	9.7	9.7
86-74-8	ole	9.7	U	9.7	9.7
218-01-9	ne	9.7	U	9.7	9.7
53-70-3	(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	ofuran	9.7	U	9.7	9.7
84-66-2	l phthalate	9.7	U	9.7	9.7
131-11-3	hyl phthalate	9.7	U	9.7	9.7
84-74-2	tyl phthalate	9.7	U	9.7	9.7
117-84-0	ctyl phthalate	9.7	U	9.7	9.7
206-44-0	nthene	9.7	U	9.7	9.7
86-73-7	ne	9.7	U	9.7	9.7
118-74-1	lorobenzene	9.7	U	9.7	9.7
87-68-3	lorobutadiene	9.7	U	9.7	9.7
77-47-4	lorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	loroethane	9.7	U	9.7	9.7
193-39-5	(1,2,3-cd)pyrene	9.7	U	9.7	9.7
78-59-1	one	9.7	U	9.7	9.7
91-20-3	lene	9.7	U	9.7	9.7
98-95-3	nzene	9.7	U	9.7	9.7
621-64-7	sodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	sodiphenylamine	9.7	U	9.7	9.7
87-86-5	lorophenol	49	U	49	49
85-01-8	hrene	9.7	U	9.7	9.7
108-95-		9.7	U	9.7	9.7
129-00-		9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	ca Savannah	Job No.:	680-32687-1
SDG No.:			
Client	SA14-SW03-1207	Lab Sample ID:	680-32816-5
Matrix:		Lab File ID:	e7759.d
Analysis	M04.3/SV	Date Received:	12/15/2007 10:11
Sample	(mL)	Date Extracted:	12/18/2007 15:30
Level:	Low	Date Analyzed:	01/13/2008 22:25
Con. Ex	(mL)	Dilution Factor:	1
Injecti		Extract. Method:	OLM04.3/SV
GPC Cl		% Moisture:	
Analy.	982	Units:	ug/L
Number		TIC Total:	25.8

CAS	Compound Name	RT	Result	Q
	n Aldol Condensate	3.55	~~20~~	~~A~~ B,BL
	a	5.37	2.5	
112-8	cid	9.58	~~3.3~~	~~N~~ B,BL

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW02-1207 | Lab Sample ID: 680-32816-7

Matrix: Water | Lab File ID: e7787.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 13:21

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: 2 (uL) | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW02-1207 | Lab Sample ID: 680-32816-7

Matrix: Water | Lab File ID: e7787.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 13:21

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: 2 (uL) | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW02-1207 | Lab Sample ID: 680-32816-7

Matrix: Water | Lab File ID: e7787.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 13:21

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: 2 (uL) | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

Number TICs Found: 5 | TIC Total: 71

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~18~~	~~A~~ B,BL
112-80-1	Oleic Acid	9.58	~~2.9~~	~~N~~ B,BL
	Unknown Organic Acid	9.69	2.9	
	Unknown Organic Acid	10.90	45	
7390-81-0	Oxirane, hexadecyl-	14.75	2.2	N

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-EB01-121407 | Lab Sample ID: 680-32816-9

Matrix: Water | Lab File ID: e7761.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1020 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 23:15

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.8	U	9.8	9.8
108-60-1	2,2'-oxybis[1-chloropropane]	9.8	U	9.8	9.8
95-95-4	2,4,5-Trichlorophenol	9.8	U	9.8	9.8
88-06-2	2,4,6-Trichlorophenol	9.8	U	9.8	9.8
120-83-2	2,4-Dichlorophenol	9.8	U	9.8	9.8
105-67-9	2,4-Dimethylphenol	9.8	U	9.8	9.8
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.8	U	9.8	9.8
606-20-2	2,6-Dinitrotoluene	9.8	U	9.8	9.8
91-58-7	2-Chloronaphthalene	9.8	U	9.8	9.8
95-57-8	2-Chlorophenol	9.8	U	9.8	9.8
95-48-7	2-Methylphenol	9.8	U	9.8	9.8
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.8	U	9.8	9.8
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.8	U	9.8	9.8
59-50-7	4-Chloro-3-methylphenol	9.8	U	9.8	9.8
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	9.8	U	9.8	9.8
106-44-5	4-Methylphenol	9.8	U	9.8	9.8
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.8	U	9.8	9.8
208-96-8	Acenaphthylene	9.8	U	9.8	9.8
98-86-2	Acetophenone	9.8	U	9.8	9.8
120-12-7	Anthracene	9.8	U	9.8	9.8
1912-24-9	Atrazine	9.8	U	9.8	9.8
100-52-7	Benzaldehyde	9.8	U	9.8	9.8
56-55-3	Benzo[a]anthracene	9.8	U	9.8	9.8
50-32-8	Benzo[a]pyrene	9.8	U	9.8	9.8
205-99-2	Benzo[b]fluoranthene	9.8	U	9.8	9.8
191-24-2	Benzo[g,h,i]perylene	9.8	U	9.8	9.8
207-08-9	Benzo[k]fluoranthene	9.8	U	9.8	9.8

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-EB01-121407 | Lab Sample ID: 680-32816-9

Matrix: Water | Lab File ID: e7761.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1020 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 23:15

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.8	U	9.8	9.8
111-44-4	Bis(2-chloroethyl)ether	9.8	U	9.8	9.8
117-81-7	Bis(2-ethylhexyl) phthalate	9.8	U	9.8	9.8
85-68-7	Butyl benzyl phthalate	9.8	U	9.8	9.8
105-60-2	Caprolactam	9.8	U	9.8	9.8
86-74-8	Carbazole	9.8	U	9.8	9.8
218-01-9	Chrysene	9.8	U	9.8	9.8
53-70-3	Dibenz(a,h)anthracene	9.8	U	9.8	9.8
132-64-9	Dibenzofuran	9.8	U	9.8	9.8
84-66-2	Diethyl phthalate	9.8	U	9.8	9.8
131-11-3	Dimethyl phthalate	9.8	U	9.8	9.8
84-74-2	Di-n-butyl phthalate	9.8	U	9.8	9.8
117-84-0	Di-n-octyl phthalate	9.8	U	9.8	9.8
206-44-0	Fluoranthene	9.8	U	9.8	9.8
86-73-7	Fluorene	9.8	U	9.8	9.8
118-74-1	Hexachlorobenzene	9.8	U	9.8	9.8
87-68-3	Hexachlorobutadiene	9.8	U	9.8	9.8
77-47-4	Hexachlorocyclopentadiene	9.8	U	9.8	9.8
67-72-1	Hexachloroethane	9.8	U	9.8	9.8
193-39-5	Indeno[1,2,3-cd]pyrene	9.8	U	9.8	9.8
78-59-1	Isophorone	9.8	U	9.8	9.8
91-20-3	Naphthalene	9.8	U	9.8	9.8
98-95-3	Nitrobenzene	9.8	U	9.8	9.8
621-64-7	N-Nitrosodi-n-propylamine	9.8	U	9.8	9.8
86-30-6	N-Nitrosodiphenylamine	9.8	U	9.8	9.8
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.8	U	9.8	9.8
108-95-2	Phenol	9.8	U	9.8	9.8
129-00-0	Pyrene	9.8	U	9.8	9.8

VK 02/6/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-EB01-121407 | Lab Sample ID: 680-32816-9

Matrix: Water | Lab File ID: e7761.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1020 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 23:15

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 2 | TIC Total: 25.7

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	23	A
112-80-1	Oleic Acid	9.58	2.7	N

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-FB01-121407 | Lab Sample ID: 680-32816-11

Matrix: Water | Lab File ID: e7762.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 23:41

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U	9.4	9.4
108-60-1	2,2'-oxybis[1-chloropropane]	9.4	U	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U	9.4	9.4
95-48-7	2-Methylphenol	9.4	U	9.4	9.4
88-74-4	2-Nitroaniline	47	U	47	47
88-75-5	2-Nitrophenol	9.4	U	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	47	U	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U	9.4	9.4
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U	9.4	9.4
106-44-5	4-Methylphenol	9.4	U	9.4	9.4
100-01-6	4-Nitroaniline	47	U	47	47
100-02-7	4-Nitrophenol	47	U	47	47
83-32-9	Acenaphthene	9.4	U	9.4	9.4
208-96-8	Acenaphthylene	9.4	U	9.4	9.4
98-86-2	Acetophenone	9.4	U	9.4	9.4
120-12-7	Anthracene	9.4	U	9.4	9.4
1912-24-9	Atrazine	9.4	U	9.4	9.4
100-52-7	Benzaldehyde	9.4	U	9.4	9.4
56-55-3	Benzo[a]anthracene	9.4	U	9.4	9.4
50-32-8	Benzo[a]pyrene	9.4	U	9.4	9.4
205-99-2	Benzo[b]fluoranthene	9.4	U	9.4	9.4
191-24-2	Benzo[g,h,i]perylene	9.4	U	9.4	9.4
207-08-9	Benzo[k]fluoranthene	9.4	U	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YSA14-FB01-121407
Lab Sample ID: 680-32816-11
Matrix: Water
Lab File ID: e7762.d
Analysis Method: OLM04.3/SV
Date Received: 12/15/2007 10:11
Sample wt/vol: 1060 (mL)
Date Extracted: 12/18/2007 15:30
Level: (low/med) Low
Date Analyzed: 01/13/2008 23:41
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95982
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.4	U	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U	9.4	9.4
105-60-2	Caprolactam	9.4	U	9.4	9.4
86-74-8	Carbazole	9.4	U	9.4	9.4
218-01-9	Chrysene	9.4	U	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U	9.4	9.4
132-64-9	Dibenzofuran	9.4	U	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U	9.4	9.4
206-44-0	Fluoranthene	9.4	U	9.4	9.4
86-73-7	Fluorene	9.4	U	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U	9.4	9.4
67-72-1	Hexachloroethane	9.4	U	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U	9.4	9.4
78-59-1	Isophorone	9.4	U	9.4	9.4
91-20-3	Naphthalene	9.4	U	9.4	9.4
98-95-3	Nitrobenzene	9.4	U	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U	9.4	9.4
87-86-5	Pentachlorophenol	47	U	47	47
85-01-8	Phenanthrene	9.4	U	9.4	9.4
108-95-2	Phenol	9.4	U	9.4	9.4
129-00-0	Pyrene	9.4	U	9.4	9.4

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YSA14-FB01-121407 | Lab Sample ID: 680-32816-11

Matrix: Water | Lab File ID: e7762.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1060 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/13/2008 23:41

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 4 | TIC Total: 20.6

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	11	A
112-80-1	Oleic Acid	9.58	2.4	N
	Unknown Organic Acid	9.71	4.7	
646-13-9	Octadecanoic acid, 2-methylpropyl ester	10.28	2.5	N

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YBKG-SW03-1207
Lab Sample ID: 680-32816-12
Matrix: Water
Lab File ID: e7763.d
Analysis Method: OLM04.3/SV
Date Received: 12/15/2007 10:11
Sample wt/vol: 1030 (mL)
Date Extracted: 12/18/2007 15:30
Level: (low/med) Low
Date Analyzed: 01/14/2008 00:05
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95982
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW03-1207 | Lab Sample ID: 680-32816-12

Matrix: Water | Lab File ID: e7763.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 00:05

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW03-1207 | Lab Sample ID: 680-32816-12

Matrix: Water | Lab File ID: e7763.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 00:05

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95982 | Units: ug/L

Number TICs Found: 6 | TIC Total: 42.6

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.55	~~21~~	A B,BL
96-19-5	1-Propene, 1,2,3-trichloro-	4.39	2.7	N
	Unknown	5.37	2.7	
	Unknown Organic Acid	9.59	7.0	
	Unknown Organic Acid	9.71	~~6.1~~	B,BL
123-95-5	Octadecanoic acid, butyl ester	10.28	3.1	N

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32687-1
SDG No.: YORK17
Client Sample ID: YBKG-SW06-1207
Lab Sample ID: 680-32816-14
Matrix: Water
Lab File ID: e7788.d
Analysis Method: OLM04.3/SV
Date Received: 12/15/2007 10:11
Sample wt/vol: 1030 (mL)
Date Extracted: 12/18/2007 15:30
Level: (low/med) Low
Date Analyzed: 01/14/2008 13:45
Con. Extract Vol.: 1 (mL)
Dilution Factor: 1
Injection Volume: 2 (uL)
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) N
% Moisture:
Analy. Batch No.: 95787
Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7

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FORM I

GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW06-1207 | Lab Sample ID: 680-32816-14

Matrix: Water | Lab File ID: e7788.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 13:45

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: 2 (uL) | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

CAS No.	Compound Name	Result	Q	RL	RL
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32687-1

SDG No.: YORK17

Client Sample ID: YBKG-SW06-1207 | Lab Sample ID: 680-32816-14

Matrix: Water | Lab File ID: e7788.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 1030 (mL) | Date Extracted: 12/18/2007 15:30

Level: (low/med) Low | Date Analyzed: 01/14/2008 13:45

Con. Extract Vol.: 1 (mL) | Dilution Factor: 1

Injection Volume: 2 (uL) | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) N | % Moisture:

Analy. Batch No.: 95787 | Units: ug/L

Number TICs Found: 7 | TIC Total: 92.5

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~25~~	~~A~~ B,BL
112-80-1	Oleic Acid	9.57	~~4.0~~	~~N~~ B,BL
	Unknown	9.70	3.3	
123-95-5	Octadecanoic acid, butyl ester	10.27	~~2.1~~	~~N~~ B,BL
791-28-6	Phosphine oxide, triphenyl-	10.90	52	N
	Unknown	13.07	3.2	
	Unknown	14.75	2.9	

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW02-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735619

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	411			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	5.8	~~J~~	B BL	P
7440-39-3	Barium	28.9	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	216000			P
7440-43-9	Cadmium	0.92	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.39	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	385			P
7439-95-4	Magnesium	636000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	34.6			P
7440-23-5	Sodium	5980000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	212000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture: JC 22008

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW02-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735620

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	146	J	B BL	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	32.8	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	228000			P
7440-43-9	Cadmium	0.72	J	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	58.6	J	B BL	P
7439-95-4	Magnesium	668000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	28.4			P
7440-23-5	Sodium	6290000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	14.9	J		P
7440-09-7	Potassium	229000	J		P
7782-49-2	Selenium	3.6	J		P
7440-28-0	Thallium	125	U	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

JDC 22608

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW03-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735625

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	536			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	33.5	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	225000			P
7440-43-9	Cadmium	0.78	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.41	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	510			P
7439-95-4	Magnesium	656000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	38.2			P
7440-23-5	Sodium	6390000			P
7440-02-0	Nickel	1.0	J		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	233000	J		P
7782-49-2	Selenium	3.3	J		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture: JBC 2/26/08

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW03-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735626

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	162	~~J~~	B BL	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	5.0	~~J~~	B BL	P
7440-39-3	Barium	35.9	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	226000			P
7440-43-9	Cadmium	1.0	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	42.4	~~J~~	B BL	P
7439-95-4	Magnesium	661000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	26.5			P
7440-23-5	Sodium	6240000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	224000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW06-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735627

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	533			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	3.8	~~J~~	B BL	P
7440-39-3	Barium	35.5	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	214000			P
7440-43-9	Cadmium	0.86	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.69	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	570			P
7439-95-4	Magnesium	615000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	53.8			P
7440-23-5	Sodium	5850000			P
7440-02-0	Nickel	0.87	J		P
7439-92-1	Lead	13.7	J		P
7440-09-7	Potassium	209000	J		P
7782-49-2	Selenium	4.0	J		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SW06-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735628

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	154	J	B BL	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.9	J	B BL	P
7440-39-3	Barium	33.0	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	217000			P
7440-43-9	Cadmium	0.96	J	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	47.8	J	B BL	P
7439-95-4	Magnesium	623000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	32.2			P
7440-23-5	Sodium	5930000			P
7440-02-0	Nickel	0.89	J		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	209000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SW02-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735615

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	1170			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	5.6	~~J~~	B BL	P
7440-39-3	Barium	33.1	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	215000			P
7440-43-9	Cadmium	0.86	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	1.5	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	1290			P
7439-95-4	Magnesium	628000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	54.0			P
7440-23-5	Sodium	5790000			P
7440-02-0	Nickel	1.3	J		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	208000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SW02-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735616

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	132	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	3.8	~~J~~	B BL	P
7440-39-3	Barium	32.7	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	224000			P
7440-43-9	Cadmium	0.84	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	30.7	~~J~~	B BL	P
7439-95-4	Magnesium	654000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	30.8			P
7440-23-5	Sodium	6090000			P
7440-02-0	Nickel	1.4	J		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	222000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SW03-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735617

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	443			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	3.8	~~J~~	B BL	P
7440-39-3	Barium	34.4	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	232000			P
7440-43-9	Cadmium	1.0	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.42	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	410			P
7439-95-4	Magnesium	685000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	33.5			P
7440-23-5	Sodium	6360000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	235000	J		P
7782-49-2	Selenium	3.4	J		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SW03-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735618

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	151	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	3.6	~~J~~	B BL	P
7440-39-3	Barium	30.8	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	226000			P
7440-43-9	Cadmium	0.93	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	40.7	~~J~~	B BL	P
7439-95-4	Magnesium	667000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	24.2			P
7440-23-5	Sodium	6120000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	220000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

JC 22660

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SW05-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735613

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.2	J		P
7429-90-5	Aluminum	460			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.6	~~J~~	B BL	P
7440-39-3	Barium	36.2	J		P
7440-41-7	Beryllium	0.16	J		P
7440-70-2	Calcium	223000			P
7440-43-9	Cadmium	1.0	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.64	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	430			P
7439-95-4	Magnesium	632000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	54.2			P
7440-23-5	Sodium	5770000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	206000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SW05-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735614

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	142	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	34.5	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	214000			P
7440-43-9	Cadmium	0.87	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	38.8	~~J~~	B BL	P
7439-95-4	Magnesium	605000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	45.1			P
7440-23-5	Sodium	5550000			P
7440-02-0	Nickel	0.93	J		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	198000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	~~U~~	UL BL	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-GW21-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735141

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	261		B BL	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	25.8	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	103000			P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	1.3	J	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	338			P
7439-95-4	Magnesium	4860	J		P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	48.5			P
7440-23-5	Sodium	9430			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2140	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	1.8	J	B BL	P
7440-66-6	Zinc	7.2	J	L BL	P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

IA-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-GW21-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735142

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	23.6	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	108000			P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.23	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	56.8	~~J~~	B BL	P
7439-95-4	Magnesium	5070			P
7439-97-6	Mercury	0.20	~~J~~	UL BL	CV
7439-96-5	Manganese	49.5			P
7440-23-5	Sodium	9940			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2280	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~J~~	UL BL	P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-GW22-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735137

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	236		B BL	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.0	J		P
7440-39-3	Barium	67.2	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	113000			P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.79	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	548			P
7439-95-4	Magnesium	5590			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	89.3			P
7440-23-5	Sodium	16600			P
7440-02-0	Nickel	0.94	J		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2730	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-GW22-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735138

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	57.2	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	104000			P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.28	J	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	281			P
7439-95-4	Magnesium	5240			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	80.8			P
7440-23-5	Sodium	15600			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2580	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U	UL BL	P

JC 12/14/07

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SW04-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735129

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	466			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	5.0	J		P
7440-39-3	Barium	33.4	J		P
7440-41-7	Beryllium	0.15	J		P
7440-70-2	Calcium	229000			P
7440-43-9	Cadmium	0.69	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.75	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	758			P
7439-95-4	Magnesium	676000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	45.7			P
7440-23-5	Sodium	6190000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	223000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SW04-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735130

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	106	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	29.9	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	227000			P
7440-43-9	Cadmium	0.60	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	26.3	J	B BL	P
7439-95-4	Magnesium	670000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	29.5			P
7440-23-5	Sodium	6070000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	217000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U	UL BL	P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SW05-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735131

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.0	~~J~~	B BL	P
7429-90-5	Aluminum	334			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	32.4	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	233000			P
7440-43-9	Cadmium	0.57	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.28	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	306			P
7439-95-4	Magnesium	686000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	34.1			P
7440-23-5	Sodium	6310000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	223000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SW05-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735132

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	3.7	J		P
7440-39-3	Barium	33.3	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	241000			P
7440-43-9	Cadmium	0.51	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	25.7	~~J~~	B BL	P
7439-95-4	Magnesium	714000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	24.2			P
7440-23-5	Sodium	6480000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	234000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SW06-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735133

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	305			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	3.6	J		P
7440-39-3	Barium	32.6	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	226000			P
7440-43-9	Cadmium	0.76	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.45	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	273			P
7439-95-4	Magnesium	665000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	31.8			P
7440-23-5	Sodium	6110000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	216000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SW06-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735134

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	118	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	31.6	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	240000			P
7440-43-9	Cadmium	0.64	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	27.2	J	B BL	P
7439-95-4	Magnesium	706000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	26.9			P
7440-23-5	Sodium	6430000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	231000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U	UL BL	P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS04-SW02-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735355

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	321			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	32.1	J		P
7440-41-7	Beryllium	0.22	J		P
7440-70-2	Calcium	237000			P
7440-43-9	Cadmium	0.90	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.32	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	254			P
7439-95-4	Magnesium	695000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	31.0			P
7440-23-5	Sodium	6530000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	236000	J		P
7782-49-2	Selenium	3.7	J		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS04-SW02-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735356

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	102	~~J~~	B BL	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	31.7	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	228000			P
7440-43-9	Cadmium	0.56	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	30.5	~~J~~	B BL	P
7439-95-4	Magnesium	666000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	23.9			P
7440-23-5	Sodium	6390000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	230000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SW02-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735361

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	293			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	31.2	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	221000			P
7440-43-9	Cadmium	0.67	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.31	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	256			P
7439-95-4	Magnesium	632000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	35.8			P
7440-23-5	Sodium	5970000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	210000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U	UL BL	P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SW02-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735362

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	101	J	B BL	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	29.1	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	229000			P
7440-43-9	Cadmium	0.92	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	22.7	J	B BL	P
7439-95-4	Magnesium	653000			P
7439-97-6	Mercury	0.20	U	UL BL	CV
7439-96-5	Manganese	30.8			P
7440-23-5	Sodium	6230000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	222000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U	UL BL	P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SW03-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735359

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	276			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	35.3	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	225000			P
7440-43-9	Cadmium	0.81	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.43	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	252			P
7439-95-4	Magnesium	641000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	36.5			P
7440-23-5	Sodium	6110000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	222000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SW03-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735360

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	108	~~J~~	B BL	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	34.1	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	234000			P
7440-43-9	Cadmium	0.69	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	639000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	33.3			P
7440-23-5	Sodium	6110000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	224000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	8.1	~~J~~	L BL	P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SW04-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735357

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	329			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	3.7	J		P
7440-39-3	Barium	31.3	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	220000			P
7440-43-9	Cadmium	0.59	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.40	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	278			P
7439-95-4	Magnesium	625000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	42.6			P
7440-23-5	Sodium	5890000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	213000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SW04-1207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735358

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	125	~~J~~	B BL	P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	5.9	J		P
7440-39-3	Barium	33.2	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	224000			P
7440-43-9	Cadmium	0.58	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.35	~~J~~	B BL	P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	56.9	~~J~~	B BL	P
7439-95-4	Magnesium	638000			P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	34.5			P
7440-23-5	Sodium	5930000			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	50.0	U		P
7440-09-7	Potassium	212000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	125	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	~~U~~	UL BL	P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS04-FB01-121307

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735365

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.17	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	384	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

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Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS04-FB01-121307F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735366

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	4.6	J		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	362	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-EB01-121307

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735363

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.23	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	451	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-EB01-121307F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735364

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	323	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-EB01-121207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735139

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.24	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	5000	U		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS12-EB01-121207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735140

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	386	J		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.31	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	55.4	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	197	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-EB01-121207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735135

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.31	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	275	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	2990	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

pc 2268

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-EB01-121207F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735136

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.48	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	285	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

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IA-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-EB01-121407

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735621

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.20	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	212	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	2860	J	K GT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	168	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-EB01-121407F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735622

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.14	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	33.4	J		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	0.33	J		P
7440-23-5	Sodium	1260	~~J~~	K OT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

JAC 2/26/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-FB01-121407

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): WATER Lab Sample ID: 735623

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	0.30	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.29	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	776	J	K OT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P
57-12-5	Cyanide	10.0	U		AS

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-FB01-121407F

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK17

Matrix (soil/water): FILTRATE Lab Sample ID: 735624

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	5.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	0.24	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	15.0	U		P
7440-23-5	Sodium	694	J	K OT	P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK17

Matrix: (soil/water) WATER
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Lab Sample ID:C7L140402 001

Sample WT/Vol: 1000 / mL
Work Order: KD8EX1AA
Dilution factor: 1
Moisture %:NA

Date Received: 12/14/07
Date Extracted:12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YS22-SW04-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.10	U
72-55-9	4,4'-DDE	0.10	U
50-29-3	4,4'-DDT	0.10	U
60-57-1	Dieldrin	0.10	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
72-20-8	Endrin	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
53494-70-5	Endrin ketone	0.10	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	1.0	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	1.0	U
53469-21-9	Aroclor 1242	1.0	U
12672-29-6	Aroclor 1248	1.0	U
11097-69-1	Aroclor 1254	1.0	U
11096-82-5	Aroclor 1260	1.0	U
8001-35-2	Toxaphene	5.0	U

JAC 12/26/08

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER Lab Sample ID: C7L140402 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1000 / mL
Work Order: KD8FA1AA
Dilution factor: 1
Moisture %: NA

Date Received: 12/14/07
Date Extracted: 12/14/07
Date Analyzed: 12/22/07

QC Batch: 7348533

Client Sample Id: YS22-SW05-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.10	U
72-55-9	4,4'-DDE	0.10	U
50-29-3	4,4'-DDT	0.10	U
60-57-1	Dieldrin	0.10	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
72-20-8	Endrin	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
53494-70-5	Endrin ketone	0.10	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	1.0	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	1.0	U
53469-21-9	Aroclor 1242	1.0	U
12672-29-6	Aroclor 1248	1.0	U
11097-69-1	Aroclor 1254	1.0	U
11096-82-5	Aroclor 1260	1.0	U
8001-35-2	Toxaphene	5.0	U

QC 22608

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER Lab Sample ID: C7L140402 003
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1040 / mL
Work Order: KD8FE1AA
Dilution factor: 0.96
Moisture %: NA

Date Received: 12/14/07
Date Extracted: 12/14/07
Date Analyzed: 12/23/07

QC Batch: 7348533

Client Sample Id: YS22-SW06-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.048	U
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
5103-71-9	alpha-Chlordane	0.048	U
5103-74-2	gamma-Chlordane	0.048	U
72-54-8	4,4'-DDD	0.096	U
72-55-9	4,4'-DDE	0.096	U
50-29-3	4,4'-DDT	0.096	U
60-57-1	Dieldrin	0.096	U
959-98-8	Endosulfan I	0.048	U
33213-65-9	Endosulfan II	0.096	U
1031-07-8	Endosulfan sulfate	0.096	U
72-20-8	Endrin	0.096	U
7421-93-4	Endrin aldehyde	0.096	U
53494-70-5	Endrin ketone	0.096	U
76-44-8	Heptachlor	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
72-43-5	Methoxychlor	0.48	U
12674-11-2	Aroclor 1016	0.96	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.96	U
53469-21-9	Aroclor 1242	0.96	U
12672-29-6	Aroclor 1248	0.96	U
11097-69-1	Aroclor 1254	0.96	U
11096-82-5	Aroclor 1260	0.96	U
8001-35-2	Toxaphene	4.8	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK17

Matrix: (soil/water) WATER
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Lab Sample ID:C7L140402 004

Sample WT/Vol: 1010 / mL
Work Order: KD8FH1AA
Dilution factor: 0.99
Moisture %:NA

Date Received: 12/14/07
Date Extracted:12/14/07
Date Analyzed: 12/23/07

Client Sample Id: YS22-EB01-121207

QC Batch: 7348533

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.099	U
72-55-9	4,4'-DDE	0.099	U
50-29-3	4,4'-DDT	0.099	U
60-57-1	Dieldrin	0.099	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.099	U
1031-07-8	Endosulfan sulfate	0.099	U
72-20-8	Endrin	0.099	U
7421-93-4	Endrin aldehyde	0.099	U
53494-70-5	Endrin ketone	0.099	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	0.99	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	0.99	U
53469-21-9	Aroclor 1242	0.99	U
12672-29-6	Aroclor 1248	0.99	U
11097-69-1	Aroclor 1254	0.99	U
11096-82-5	Aroclor 1260	0.99	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER Lab Sample ID: C7L150137 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1060 / mL
Work Order: KD83A1AA
Dilution factor: 0.94
Moisture %: NA

Date Received: 12/15/07
Date Extracted: 12/18/07
Date Analyzed: 12/22/07

QC Batch: 7352429

Client Sample Id: YS04-SW02-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.047	U
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U
5103-71-9	alpha-Chlordane	0.047	U
5103-74-2	gamma-Chlordane	0.047	U
72-54-8	4,4'-DDD	0.094	U
72-55-9	4,4'-DDE	0.094	U
50-29-3	4,4'-DDT	0.094	U
60-57-1	Dieldrin	0.094	U
959-98-8	Endosulfan I	0.047	U
33213-65-9	Endosulfan II	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
72-20-8	Endrin	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
53494-70-5	Endrin ketone	0.094	U
76-44-8	Heptachlor	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
72-43-5	Methoxychlor	0.47	U
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U
8001-35-2	Toxaphene	4.7	U

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER Lab Sample ID: C7L150137 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1060 / mL
Work Order: KD83E1AA
Dilution factor: 0.94
Moisture %: NA

Date Received: 12/15/07
Date Extracted: 12/18/07
Date Analyzed: 12/22/07

QC Batch: 7352429

Client Sample Id: YS08-SW04-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.047	U
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U
5103-71-9	alpha-Chlordane	0.047	U
5103-74-2	gamma-Chlordane	0.047	U
72-54-8	4,4'-DDD	0.094	U
72-55-9	4,4'-DDE	0.094	U
50-29-3	4,4'-DDT	0.094	U
60-57-1	Dieldrin	0.094	U
959-98-8	Endosulfan I	0.047	U
33213-65-9	Endosulfan II	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
72-20-8	Endrin	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
53494-70-5	Endrin ketone	0.094	U
76-44-8	Heptachlor	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
72-43-5	Methoxychlor	0.47	U
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U
8001-35-2	Toxaphene	4.7	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK17

Matrix: (soil/water) WATER Lab Sample ID:C7L150137 003
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1060 / mL
Work Order: KD83G1AA
Dilution factor: 0.94
Moisture %:NA

Date Received: 12/15/07
Date Extracted:12/18/07
Date Analyzed: 12/22/07

QC Batch: 7352429

Client Sample Id: YS08-SW03-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.047	U
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U
5103-71-9	alpha-Chlordane	0.047	U
5103-74-2	gamma-Chlordane	0.047	U
72-54-8	4,4'-DDD	0.094	U
72-55-9	4,4'-DDE	0.094	U
50-29-3	4,4'-DDT	0.094	U
60-57-1	Dieldrin	0.094	U
959-98-8	Endosulfan I	0.047	U
33213-65-9	Endosulfan II	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
72-20-8	Endrin	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
53494-70-5	Endrin ketone	0.094	U
76-44-8	Heptachlor	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
72-43-5	Methoxychlor	0.47	U
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U
8001-35-2	Toxaphene	4.7	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK17

Matrix: (soil/water) WATER
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Lab Sample ID:C7L150137 004

Sample WT/Vol: 1060 / mL
Work Order: KD83H1AA
Dilution factor: 0.94
Moisture %:NA

Date Received: 12/15/07
Date Extracted:12/18/07
Date Analyzed: 12/22/07

QC Batch: 7352429

Client Sample Id: YS08-SW02-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.047	U
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U
5103-71-9	alpha-Chlordane	0.047	U
5103-74-2	gamma-Chlordane	0.047	U
72-54-8	4,4'-DDD	0.094	U
72-55-9	4,4'-DDE	0.094	U
50-29-3	4,4'-DDT	0.094	U
60-57-1	Dieldrin	0.094	U
959-98-8	Endosulfan I	0.047	U
33213-65-9	Endosulfan II	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
72-20-8	Endrin	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
53494-70-5	Endrin ketone	0.094	U
76-44-8	Heptachlor	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
72-43-5	Methoxychlor	0.47	U
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U
8001-35-2	Toxaphene	4.7	U

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Lab Sample ID: C7L150137 005

Sample WT/Vol: 1000 / mL
Work Order: KD83K1AA
Dilution factor: 1
Moisture %: NA

Date Received: 12/15/07
Date Extracted: 12/18/07
Date Analyzed: 12/22/07

Client Sample Id: YS08-EB01-121307

QC Batch: 7352429

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.10	U
72-55-9	4,4'-DDE	0.10	U
50-29-3	4,4'-DDT	0.10	U
60-57-1	Dieldrin	0.10	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
72-20-8	Endrin	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
53494-70-5	Endrin ketone	0.10	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	1.0	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	1.0	U
53469-21-9	Aroclor 1242	1.0	U
12672-29-6	Aroclor 1248	1.0	U
11097-69-1	Aroclor 1254	1.0	U
11096-82-5	Aroclor 1260	1.0	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER Lab Sample ID: C7L150137 006
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1060 / mL
Work Order: KD83L1AA
Dilution factor: 0.94
Moisture %: NA

Date Received: 12/15/07
Date Extracted: 12/18/07
Date Analyzed: 12/22/07

QC Batch: 7352429

Client Sample Id: YS04-PB01-121307

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.047	U
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U
5103-71-9	alpha-Chlordane	0.047	U
5103-74-2	gamma-Chlordane	0.047	U
72-54-8	4,4'-DDD	0.094	U
72-55-9	4,4'-DDE	0.094	U
50-29-3	4,4'-DDT	0.094	U
60-57-1	Dieldrin	0.094	U
959-98-8	Endosulfan I	0.047	U
33213-65-9	Endosulfan II	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
72-20-8	Endrin	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
53494-70-5	Endrin ketone	0.094	U
76-44-8	Heptachlor	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
72-43-5	Methoxychlor	0.47	U
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U
8001-35-2	Toxaphene	4.7	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK17

Matrix: (soil/water) WATER Lab Sample ID:C7L180268 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1060 / mL
Work Order: KED2E1AA
Dilution factor: 0.94
Moisture %:NA

Date Received: 12/18/07
Date Extracted:12/19/07
Date Analyzed: 12/23/07

QC Batch: 7353528

Client Sample Id: YSA14-SW05-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.047	U
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U
5103-71-9	alpha-Chlordane	0.047	U
5103-74-2	gamma-Chlordane	0.047	U
72-54-8	4,4'-DDD	0.094	U
72-55-9	4,4'-DDE	0.094	U
50-29-3	4,4'-DDT	0.094	U
60-57-1	Dieldrin	0.094	U
959-98-8	Endosulfan I	0.047	U
33213-65-9	Endosulfan II	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
72-20-8	Endrin	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
53494-70-5	Endrin ketone	0.094	U
76-44-8	Heptachlor	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
72-43-5	Methoxychlor	0.47	U
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U
8001-35-2	Toxaphene	4.7	U

JC 3/26/08

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER Lab Sample ID: C7L180268 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1060 / mL
Work Order: KED2H1AA
Dilution factor: 0.94
Moisture %: NA

Date Received: 12/18/07
Date Extracted: 12/19/07
Date Analyzed: 12/23/07

Client Sample Id: YSA14-SW02-1207

QC Batch: 7353528

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.047	U
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U
5103-71-9	alpha-Chlordane	0.047	U
5103-74-2	gamma-Chlordane	0.047	U
72-54-8	4,4'-DDD	0.094	U
72-55-9	4,4'-DDE	0.094	U
50-29-3	4,4'-DDT	0.094	U
60-57-1	Dieldrin	0.094	U
959-98-8	Endosulfan I	0.047	U
33213-65-9	Endosulfan II	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
72-20-8	Endrin	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
53494-70-5	Endrin ketone	0.094	U
76-44-8	Heptachlor	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
72-43-5	Methoxychlor	0.47	U
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U
8001-35-2	Toxaphene	4.7	U

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER Lab Sample ID: C7L180268 003
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1010 / mL
Work Order: KED2J1AA
Dilution factor: 0.99
Moisture %: NA

Date Received: 12/18/07
Date Extracted: 12/19/07
Date Analyzed: 12/23/07

QC Batch: 7353528

Client Sample Id: YSA14-SW03-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.099	U
72-55-9	4,4'-DDE	0.099	U
50-29-3	4,4'-DDT	0.099	U
60-57-1	Dieldrin	0.099	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.099	U
1031-07-8	Endosulfan sulfate	0.099	U
72-20-8	Endrin	0.099	U
7421-93-4	Endrin aldehyde	0.099	U
53494-70-5	Endrin ketone	0.099	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	0.99	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	0.99	U
53469-21-9	Aroclor 1242	0.99	U
12672-29-6	Aroclor 1248	0.99	U
11097-69-1	Aroclor 1254	0.99	U
11096-82-5	Aroclor 1260	0.99	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Lab Sample ID: C7L180268 004

Sample WT/Vol: 1010 / mL
Work Order: KED2K1AA
Dilution factor: 0.99
Moisture %: NA

Date Received: 12/18/07
Date Extracted: 12/19/07
Date Analyzed: 12/23/07

Client Sample Id: YBKG-SW02-1207

QC Batch: 7353528

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.099	U
72-55-9	4,4'-DDE	0.099	U
50-29-3	4,4'-DDT	0.099	U
60-57-1	Dieldrin	0.099	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.099	U
1031-07-8	Endosulfan sulfate	0.099	U
72-20-8	Endrin	0.099	U
7421-93-4	Endrin aldehyde	0.099	U
53494-70-5	Endrin ketone	0.099	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	0.99	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	0.99	U
53469-21-9	Aroclor 1242	0.99	U
12672-29-6	Aroclor 1248	0.99	U
11097-69-1	Aroclor 1254	0.99	U
11096-82-5	Aroclor 1260	0.99	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK17

Matrix: (soil/water) WATER
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Lab Sample ID:C7L180268 005

Sample WT/Vol: 1010 / mL
Work Order: KED2L1AA
Dilution factor: 0.99
Moisture %:NA

Date Received: 12/18/07
Date Extracted:12/19/07
Date Analyzed: 12/23/07

QC Batch: 7353528

Client Sample Id: YSA14-EB01-121407

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.050	U
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
72-54-8	4,4'-DDD	0.099	U
72-55-9	4,4'-DDE	0.099	U
50-29-3	4,4'-DDT	0.099	U
60-57-1	Dieldrin	0.099	U
959-98-8	Endosulfan I	0.050	U
33213-65-9	Endosulfan II	0.099	U
1031-07-8	Endosulfan sulfate	0.099	U
72-20-8	Endrin	0.099	U
7421-93-4	Endrin aldehyde	0.099	U
53494-70-5	Endrin ketone	0.099	U
76-44-8	Heptachlor	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
72-43-5	Methoxychlor	0.50	U
12674-11-2	Aroclor 1016	0.99	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	0.99	U
53469-21-9	Aroclor 1242	0.99	U
12672-29-6	Aroclor 1248	0.99	U
11097-69-1	Aroclor 1254	0.99	U
11096-82-5	Aroclor 1260	0.99	U
8001-35-2	Toxaphene	5.0	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK17

Matrix: (soil/water) WATER Lab Sample ID:C7L180268 006
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1050 / mL
Work Order: KED2M1AA
Dilution factor: 0.95
Moisture %:NA

Date Received: 12/18/07
Date Extracted:12/19/07
Date Analyzed: 12/23/07

QC Batch: 7353528

Client Sample Id: YSA14-FB01-121407

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.048	U
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
5103-71-9	alpha-Chlordane	0.048	U
5103-74-2	gamma-Chlordane	0.048	U
72-54-8	4,4'-DDD	0.095	U
72-55-9	4,4'-DDE	0.095	U
50-29-3	4,4'-DDT	0.095	U
60-57-1	Dieldrin	0.095	U
959-98-8	Endosulfan I	0.048	U
33213-65-9	Endosulfan II	0.095	U
1031-07-8	Endosulfan sulfate	0.095	U
72-20-8	Endrin	0.095	U
7421-93-4	Endrin aldehyde	0.095	U
53494-70-5	Endrin ketone	0.095	U
76-44-8	Heptachlor	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
72-43-5	Methoxychlor	0.48	U
12674-11-2	Aroclor 1016	0.95	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.95	U
53469-21-9	Aroclor 1242	0.95	U
12672-29-6	Aroclor 1248	0.95	U
11097-69-1	Aroclor 1254	0.95	U
11096-82-5	Aroclor 1260	0.95	U
8001-35-2	Toxaphene	4.8	U

FORM I

TestAmerica Burlington

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK17

Matrix: (soil/water) WATER Lab Sample ID: C7L180268 007
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1060 / mL
Work Order: KED2N1AA
Dilution factor: 0.94
Moisture %: NA

Date Received: 12/18/07
Date Extracted: 12/19/07
Date Analyzed: 12/23/07

QC Batch: 7353528

Client Sample Id: YBKG-SW03-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.047	U
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U
5103-71-9	alpha-Chlordane	0.047	U
5103-74-2	gamma-Chlordane	0.047	U
72-54-8	4,4'-DDD	0.094	U
72-55-9	4,4'-DDE	0.094	U
50-29-3	4,4'-DDT	0.094	U
60-57-1	Dieldrin	0.094	U
959-98-8	Endosulfan I	0.047	U
33213-65-9	Endosulfan II	0.094	U
1031-07-8	Endosulfan sulfate	0.094	U
72-20-8	Endrin	0.094	U
7421-93-4	Endrin aldehyde	0.094	U
53494-70-5	Endrin ketone	0.094	U
76-44-8	Heptachlor	0.047	U
1024-57-3	Heptachlor epoxide	0.047	U
72-43-5	Methoxychlor	0.47	U
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U
8001-35-2	Toxaphene	4.7	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK17

Matrix: (soil/water) WATER Lab Sample ID:C7L180268 008
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1050 / mL
Work Order: KED2Q1AA
Dilution factor: 0.95
Moisture %:NA

Date Received: 12/18/07
Date Extracted:12/19/07
Date Analyzed: 12/23/07

QC Batch: 7353528

Client Sample Id: YBKG-SW06-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
309-00-2	Aldrin	0.048	U
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
5103-71-9	alpha-Chlordane	0.048	U
5103-74-2	gamma-Chlordane	0.048	U
72-54-8	4,4'-DDD	0.095	U
72-55-9	4,4'-DDE	0.095	U
50-29-3	4,4'-DDT	0.095	U
60-57-1	Dieldrin	0.095	U
959-98-8	Endosulfan I	0.048	U
33213-65-9	Endosulfan II	0.095	U
1031-07-8	Endosulfan sulfate	0.095	U
72-20-8	Endrin	0.095	U
7421-93-4	Endrin aldehyde	0.095	U
53494-70-5	Endrin ketone	0.095	U
76-44-8	Heptachlor	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
72-43-5	Methoxychlor	0.48	U
12674-11-2	Aroclor 1016	0.95	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.95	U
53469-21-9	Aroclor 1242	0.95	U
12672-29-6	Aroclor 1248	0.95	U
11097-69-1	Aroclor 1254	0.95	U
11096-82-5	Aroclor 1260	0.95	U
8001-35-2	Toxaphene	4.8	U

FORM I

TestAmerica Burlington

Client Sample ID: YS22-SW04-1207

HPLC

Lot-Sample #...: G7L140228-001 Work Order #...: KD6361AA Matrix.....: WATER
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353315
Dilution Factor: 1 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	93	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS22-SW05-1207

HPLC

Lot-Sample #...: G7L140228-002 Work Order #...: KD64L1AA Matrix.....: WATER
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353315
Dilution Factor: 1.01 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS22-SW06-1207

HPLC

Lot-Sample #...: G7L140228-003 Work Order #...: KD64Q1AA Matrix.....: WATER
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353315
Dilution Factor: 1.03 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.31	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.52	ug/L
3-Nitrotoluene	ND	0.52	ug/L
4-Nitrotoluene	ND	0.52	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.26	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	90	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS22-EB01-121207

HPLC

Lot-Sample #...: G7L140228-004	**Work Order #...:** KD64T1AA	**Matrix.....:** WATER
Date Sampled...: 12/12/07	**Date Received..:** 12/14/07	
Prep Date.....: 12/19/07	**Analysis Date..:** 12/23/07	
Prep Batch #...: 7353315		
Dilution Factor: 1.05	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.16	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.32	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.16	ug/L
2,4-Dinitrotoluene	ND	0.16	ug/L
2,6-Dinitrotoluene	ND	0.16	ug/L
HMX	ND	0.16	ug/L
Nitrobenzene	ND	0.16	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.52	ug/L
3-Nitrotoluene	ND	0.52	ug/L
4-Nitrotoluene	ND	0.52	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.26	ug/L
Tetryl	ND	0.16	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.16	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS12-GW22-1207

HPLC

Lot-Sample #...: G7L140228-005	**Work Order #...:** KD6401AA	**Matrix.....:** WATER
Date Sampled...: 12/12/07	**Date Received..:** 12/14/07	
Prep Date.....: 12/19/07	**Analysis Date..:** 12/23/07	
Prep Batch #...: 7353315		
Dilution Factor: 0.97	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.97	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.97	ug/L
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	ND	0.97	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.097	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	96	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS12-EB01-121207

HPLC

Lot-Sample #...: G7L140228-006 Work Order #...: KD6431AA Matrix.....: WATER
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/19/07 Analysis Date..: 12/23/07
Prep Batch #...: 7353315
Dilution Factor: 1 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	96	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS12-GW21-1207

HPLC

Lot-Sample #...: G7L140228-007 **Work Order #...:** KD6451AA **Matrix.....:** WATER
Date Sampled...: 12/12/07 **Date Received..:** 12/14/07
Prep Date.....: 12/19/07 **Analysis Date..:** 12/23/07
Prep Batch #...: 7353315
Dilution Factor: 1 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS04-SW02-1207

HPLC

Lot-Sample #...: G7L140228-008 Work Order #...: KEAHP1AA Matrix.....: WATER
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/19/07 Analysis Date..: 12/24/07
Prep Batch #...: 7353315
Dilution Factor: 0.99 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	0.99	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.99	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	0.99	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.099	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	92	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS08-SW04-1207

HPLC

Lot-Sample #...: G7L140228-009	**Work Order #...:** KEAHX1AA	**Matrix.....:** WATER
Date Sampled...: 12/13/07	**Date Received..:** 12/15/07	
Prep Date.....: 12/19/07	**Analysis Date..:** 12/24/07	
Prep Batch #...: 7353315		
Dilution Factor: 1.05	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.16	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.32	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.16	ug/L
2,4-Dinitrotoluene	ND	0.16	ug/L
2,6-Dinitrotoluene	ND	0.16	ug/L
HMX	0.21 ~~PG~~ J 2C	0.16	ug/L
Nitrobenzene	ND	0.16	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.52	ug/L
3-Nitrotoluene	ND	0.52	ug/L
4-Nitrotoluene	ND	0.52	ug/L
PETN	ND	1.0	ug/L
RDX	**0.041 J,~~PG~~** J 2C	**0.26**	**ug/L**
Tetryl	ND	0.16	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.16	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	93	(84 - 125)

NOTE(S):

PG The percent difference between the original and confirmation analyses is greater than 40%.

J Estimated result. Result is less than RL.

TestAmerica Burlington

Client Sample ID: YS08-SW03-1207

HPLC

Lot-Sample #...: G7L140228-010 Work Order #...: KEAH31AA Matrix.....: WATER
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/19/07 Analysis Date..: 12/24/07
Prep Batch #...: 7353315
Dilution Factor: 1 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	93	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS08-SW02-1207

HPLC

Lot-Sample #...: G7L140228-011 Work Order #...: KEAH61AA Matrix.....: WATER
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/19/07 Analysis Date..: 12/24/07
Prep Batch #...: 7353315
Dilution Factor: 1 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	93	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS08-EB01-121307

HPLC

Lot-Sample #...: G7L140228-012 Work Order #...: KEAH81AA Matrix.....: WATER
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/19/07 Analysis Date..: 12/24/07
Prep Batch #...: 7353315
Dilution Factor: 1.02 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.31	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.51	ug/L
3-Nitrotoluene	ND	0.51	ug/L
4-Nitrotoluene	ND	0.51	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.26	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS08-FB01-121307

HPLC

Lot-Sample #...: G7L140228-013 Work Order #...: KEAJD1AA Matrix.....: WATER
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/19/07 Analysis Date..: 12/24/07
Prep Batch #...: 7353315
Dilution Factor: 0.97 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.97	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.97	ug/L
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	ND	0.97	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.097	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	93	(84 - 125)

TestAmerica Burlington

Client Sample ID: YSA14-SW05-1207

HPLC

Lot-Sample #...: G7L140228-014 Work Order #...: KEED41AA Matrix.....: WATER
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/21/07 Analysis Date..: 12/24/07
Prep Batch #...: 7355296
Dilution Factor: 0.98 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.98	ug/L
2-Nitrotoluene	ND	0.49	ug/L
3-Nitrotoluene	ND	0.49	ug/L
4-Nitrotoluene	ND	0.49	ug/L
PETN	ND	0.98	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.098	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.98	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	92	(84 - 125)

TestAmerica Burlington

Client Sample ID: YSA14-SW02-1207

HPLC

Lot-Sample #...: G7L140228-015	**Work Order #...:** KEED71AA	**Matrix.....:** WATER
Date Sampled...: 12/14/07	**Date Received..:** 12/18/07	
Prep Date.....: 12/21/07	**Analysis Date..:** 12/24/07	
Prep Batch #...: 7355296		
Dilution Factor: 0.99	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	**0.050 J,PG** J 2C	**0.15**	**ug/L**
Nitroglycerin	ND	0.99	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	0.99	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.099	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	0.99	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	91	(84 - 125)

NOTE(S):

J Estimated result. Result is less than RL.

PG The percent difference between the original and confirmation analyses is greater than 40%.

TestAmerica Burlington

Client Sample ID: YSA14-SW03-1207

HPLC

Lot-Sample #...: G7L140228-016 Work Order #...: KEED91AA Matrix.....: WATER
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/21/07 Analysis Date..: 12/24/07
Prep Batch #...: 7355296
Dilution Factor: 1 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	92	(84 - 125)

TestAmerica Burlington

Client Sample ID: YBKG-SW02-1207

HPLC

Lot-Sample #...: G7L140228-017 Work Order #...: KEEEC1AA Matrix.....: WATER
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/21/07 Analysis Date..: 12/24/07
Prep Batch #...: 7355296
Dilution Factor: 1.01 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	91	(84 - 125)

TestAmerica Burlington

Client Sample ID: YSA14-EB01-121407

HPLC

Lot-Sample #...: G7L140228-018	**Work Order #...:** KEEEE1AA	**Matrix.....:** WATER
Date Sampled...: 12/14/07	**Date Received..:** 12/18/07	
Prep Date.....: 12/21/07	**Analysis Date..:** 12/24/07	
Prep Batch #...: 7355296		
Dilution Factor: 1.05	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.16	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.32	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.16	ug/L
2,4-Dinitrotoluene	ND	0.16	ug/L
2,6-Dinitrotoluene	ND	0.16	ug/L
HMX	ND	0.16	ug/L
Nitrobenzene	ND	0.16	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.52	ug/L
3-Nitrotoluene	ND	0.52	ug/L
4-Nitrotoluene	ND	0.52	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.26	ug/L
Tetryl	ND	0.16	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.16	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	93	(84 - 125)

TestAmerica Burlington

Client Sample ID: YSA14-FB01-121407

HPLC

Lot-Sample #...: G7L140228-019 Work Order #...: KEEEG1AA Matrix.....: WATER
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/21/07 Analysis Date..: 12/24/07
Prep Batch #...: 7355296
Dilution Factor: 0.99 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	0.99	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.99	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	0.99	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.099	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(84 - 125)

TestAmerica Burlington

Client Sample ID: YBKG4-SW03-1207

HPLC

Lot-Sample #...: G7L140228-020 Work Order #...: KEEEH1AA Matrix.....: WATER
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/21/07 Analysis Date..: 12/24/07
Prep Batch #...: 7355296
Dilution Factor: 1 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	90	(84 - 125)

TestAmerica Burlington

Client Sample ID: YBKG4-SW06-1207

HPLC

Lot-Sample #...: G7L140228-021 Work Order #...: KEEEK1AA Matrix.....: WATER
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/21/07 Analysis Date..: 12/24/07
Prep Batch #...: 7355296
Dilution Factor: 1.04 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrotoluene	ND	0.16	ug/L
2,6-Dinitrotoluene	ND	0.16	ug/L
HMX	ND	0.16	ug/L
Nitrobenzene	ND	0.16	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.52	ug/L
3-Nitrotoluene	ND	0.52	ug/L
4-Nitrotoluene	ND	0.52	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.26	ug/L
Tetryl	ND	0.16	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.16	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.16	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.31	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.16	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	91	(84 - 125)

TestAmerica Burlington

Client Sample ID: YS22-EB01-121207

Dissolved HPLC

Lot-Sample #...: G7L140228-004	Work Order #...: KD64T1AC	Matrix.....: WATER
Date Sampled...: 12/12/07	Date Received..: 12/14/07	
Prep Date.....: 12/26/07	Analysis Date..: 12/29/07	
Prep Batch #...: 7360298		
Dilution Factor: 1	Method.....: SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS12-GW22-1207

Dissolved HPLC

Lot-Sample #...: G7L140228-005	Work Order #...: KD6401AC	Matrix.....: WATER
Date Sampled...: 12/12/07	Date Received..: 12/14/07	
Prep Date.....: 12/26/07	Analysis Date..: 12/29/07	
Prep Batch #...: 7360298		
Dilution Factor: 1	Method.....: SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS12-EB01-121207

Dissolved HPLC

Lot Sample #...: G7L140228-006 Work Order #...: KD6431AC Matrix.....: WATER
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/26/07 Analysis Date..: 12/29/07
Prep Batch #...: 7360298
Dilution Factor: 1 Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS12-GW21-1207

Dissolved HPLC

Lot-Sample #...: G7L140228-007 Work Order #...: KD6451AC Matrix.....: WATER
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/26/07 Analysis Date..: 12/29/07
Prep Batch #...: 7360298
Dilution Factor: 1 Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS08-EB01-121307

Dissolved HPLC

Lot-Sample #...: G7L140228-012 Work Order #...: KEAH81AC Matrix.....: WATER
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/26/07 Analysis Date..: 12/29/07
Prep Batch #...: 7360298
Dilution Factor: 1 Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YS08-FB01-121307

Dissolved HPLC

Lot-Sample #...:	G7L140228-013	Work Order #...:	KEAJD1AC	Matrix.....:	WATER
Date Sampled...:	12/13/07	Date Received..:	12/15/07		
Prep Date.....:	12/26/07	Analysis Date..:	12/29/07		
Prep Batch #...:	7360298				
Dilution Factor:	1	Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YSA14-EB01-121407

Dissolved HPLC

Lot-Sample #...:	G7L140228-018	Work Order #...:	KEEEE1AC	Matrix.....:	WATER
Date Sampled...:	12/14/07	Date Received..:	12/18/07		
Prep Date.....:	12/26/07	Analysis Date..:	12/29/07		
Prep Batch #...:	7360298				
Dilution Factor:	1	Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica Burlington

Client Sample ID: YSA14-FB01-121407

Dissolved HPLC

Lot-Sample #...: G7L140228-019 Work Order #...: KEEEG1AC Matrix.....: WATER
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/26/07 Analysis Date..: 12/29/07
Prep Batch #...: 7360298
Dilution Factor: 1 Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

January 30, 2008

Ms. Stacy Davenport
CH2M Hill
15010 Conference Center Drive
Suite 200
Chantilly, VA 20151

Re: Laboratory Project No. 27000
Case: 27000; SDG: YORK17

Dear Ms. Davenport:

Enclosed are the analytical results for the samples that were received by TestAmerica Burlington on December 13th, 14th and 15th, 2007. Laboratory identification numbers were assigned, and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 12/13/07 ETR No: 123391		
735129	YS22-SW04-1207	12/12/07	WATER
735130	YS22-SW04-1207F	12/12/07	FILTRATE
735131	YS22-SW05-1207	12/12/07	WATER
735132	YS22-SW05-1207F	12/12/07	FILTRATE
735133	YS22-SW06-1207	12/12/07	WATER
735134	YS22-SW06-1207F	12/12/07	FILTRATE
735135	YS22-EB01-121207	12/12/07	WATER
735136	YS22-EB01-121207F	12/12/07	FILTRATE
735137	YS12-GW22-1207	12/12/07	WATER
735138	YS12-GW22-1207F	12/12/07	FILTRATE
735139	YS12-EB01-121207	12/12/07	WATER
735140	YS12-EB01-121207F	12/12/07	FILTRATE
735141	YS12-GW21-1207	12/12/07	WATER
735142	YS12-GW21-1207F	12/12/07	FILTRATE
	Received: 12/14/07 ETR No: 123420		
735355	YS04-SW02-1207	12/13/07	WATER
735356	YS04-SW02-1207F	12/13/07	FILTRATE
735357	YS08-SW04-1207	12/13/07	WATER
735358	YS08-SW04-1207F	12/13/07	FILTRATE
735359	YS08-SW03-1207	12/13/07	WATER
735360	YS08-SW03-1207F	12/13/07	FILTRATE
735361	YS08-SW02-1207	12/13/07	WATER
735362	YS08-SW02-1207F	12/13/07	FILTRATE
735363	YS08-EB01-121307	12/13/07	WATER

30 Community Drive, Suite 11 South Burlington, VT 05403 **tel** 802.660.1990 **fax** 802.660.1919 **www.testamericainc.com**

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 12/14/07 ETR No: 123420		
735364	YS08-EB01-121307F	12/13/07	FILTRATE
735365	YS04-FB01-121307	12/13/07	WATER
735366	YS04-FB01-121307F	12/13/07	FILTRATE
	Received: 12/15/07 ETR No: 123448		
735613	YSA14-SW05-1207	12/14/07	WATER
735614	YSA14-SW05-1207F	12/14/07	FILTRATE
735615	YSA14-SW02-1207	12/14/07	WATER
735616	YSA14-SW02-1207F	12/14/07	FILTRATE
735617	YSA14-SW03-1207	12/14/07	WATER
735618	YSA14-SW03-1207F	12/14/07	FILTRATE
735619	YBKG-SW02-1207	12/14/07	WATER
735620	YBKG-SW02-1207F	12/14/07	FILTRATE
735621	YSA14-EB01-121407	12/14/07	WATER
735622	YSA14-EB01-121407F	12/14/07	FILTRATE
735623	YSA14-FB01-121407	12/14/07	WATER
735624	YSA14-FB01-121407F	12/14/07	FILTRATE
735625	YBKG-SW03-1207	12/14/07	WATER
735626	YBKG-SW03-1207F	12/14/07	FILTRATE
735627	YBKG-SW06-1207	12/14/07	WATER
735628	YBKG-SW06-1207F	12/14/07	FILTRATE

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

The samples in this delivery group were received by TAL Burlington. The containers provided for nitroaromatic and nitroguanadine analyses were forwarded to TAL West Sacramento. Any containers provided for Pesticide/PCB analyses were forwarded to TAL Pittsburgh. Analytical data for those fractions is filed at the end of this submittal in sections titled Subcontract Data.

Please note that the original metals analyses of most samples in this delivery group exhibited failure of internal standard Indium. These samples were re-analyzed for lead and thallium at five-fold dilutions yielding acceptable results.

Any reference within this report to Severn Trent Laboratories, Inc. or STL, should be understood to refer to TestAmerica Laboratories, Inc. (formerly known as Severn Trent Laboratories, Inc.) The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

If there are any questions regarding this submittal, please contact me at 802 660-1990.

Sincerely,

Jim Madison
Project Manager

Enclosure

GPL LABORATORIES, LLLP

7210A Corporate Court
Frederick, MD 21703
(301) 694-5310
Fax (301) 620-0731

Burlington

Contract #/Billing Reference: CTO 195

1 of 1 Pgs.

Project: CTO 195 NWS Yorktown
Client: CH2M Hill
Send Results To: Chelsea Bennett
Address: 5700 Cleveland St Ste 101
Virginia Beach VA 23462
Phone: 757 671 8311

Turnaround Time: Per Contract

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Expl/Petn Nitroaromatics/Nitramines	Pest/PCB 1L	250mL Total Metals	250mL Dissolved Metals	250mL Cyanide	TOC, Phn, Grain Size	AVS/Sem Metal, Cyanide	Pest PCB Sol	Expl/PETN/3,5-DNA Nitroglycerin/Nitrocellulose			Lab Cooler No. / CLIENT COMMENTS
# of Containers					8	8	4	4	4	3	3	3				
Container Type					1L	1L	250mL	250mL	250mL	16oz	8oz	4oz				
Preservative Used																
Type of Analysis					3,5 DNA 1L	1L										
22-SW04-1207	12/12/07	1210	SW	OT	2	2	1	1	1							
22-SD04-1207	12/12/07	1220	SED	OT						1	1	1				
22-SW05-1207	12/12/07	1115	SW	OT	2	2	1	1	1							
22-SD05-1207	12/12/07	1125	SED	OT						1	1	1				
22-SW06-1207	12/12/07	1030	SW	OT	2	2	1	1	1							
22-SD06-1207	12/12/07	1040	SED	OT						1	1	1				
22-EB01-121207	12/12/07	1600	EB	OT	2	2	1	1	1							Equipment blank
																* 3 coolers

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	12/12/07 1830			[signature]	12/13/07 1045

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
					see attached sheet for tracking numbers

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:
				4.3, 4.3, 2.6, 4.5, 4.0

G.P. W.O. _____

[redacted]

Chain of Custody Record

BURLINGTON
2 coolers

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M HILL	Project Manager: LAURA COOK	Date: 12/12/07	Chain of Custody Number: 367964
Address: 5700 CLEVELAND ST #101	Telephone Number (Area Code)/Fax Number: (757) 671 6208	Lab Number	Page 1 of 1
City: VA BEACH; State: VA; Zip Code: 23462	Site Contact: CHELSEA BENNET	Lab Contact	
Project Name and Location (State): YORKTOWN NWS (VA)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.: CTO-195			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed	Soil	Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	EXPL/PETN/3,5 DNA/Nitroglycerin	Nitroguanidine	Cyanide	Tot. Mtls (MDS 3.3)	DISS Mtls (MDS 3.3)	Special Instructions/ Conditions of Receipt
YS12-GW22-1207	12/12/07	1225		✓			4		2		1		2	2	1	1	1	
YS12-EB01-121207	12/12/07	1330		✓			4		2		1		2	2	1	1	1	
YS12-GW21-1207	12/12/07	1620		✓			4		2		1		2	2	1	1	1	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Carol Peterson	12/12/07	1900	1. Received By: Jack Lasti	12/13/07	1045
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDGs affected

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: December 13, 2007

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station, CTO-195.

Some analyses were listed incorrectly on the COCs for samples collected on December 12, 2007 and need to be corrected in the lab hardcopy report, and any electronic deliverables.

- Sample YS22-EB01-121207 should be analyzed for Nitroglycerin 8332 and Nitroguanadine IAPP.

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Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDGs affected

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: December 14, 2007

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station, CTO-195.

Some analyses were listed incorrectly on the COCs for samples collected on December 13, 2007 and need to be corrected in the lab hardcopy report, and any electronic deliverables.

- Samples YS08-EB01-121307 and YS04-FB01-121307 should be analyzed for Nitroglycerin 8332 and Nitroguanadine IAPP.

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Burlington CTO-195

GPL LABORATORIES, LLLP

7210A Corporate Court
Frederick, MD 21703
(301) 694-5310
Fax (301) 620-0731

Contract #/Billing Reference: CTO-195

of Pgs.

Project: NNS Yorktown (CTO-195)
Client: CH2M Hill
Send Results To: Chelsea Bennet
Address: 5700 Cleveland St, Suite 101
Virginia Beach, VA 23462
Phone: 757-671-6208

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Explo, PETN, 3,5-DNA	Pesticides + PCBs	Total Metals	Dissolved Metals	Cyanide	Explo, PETN, 3,5DNA, Nitroglycerin, Nitroguanidine	Metals, Cyanide, Pesticides, PCBs	TCL, Grain size, pH, AVS SEM				Lab Cooler No. / CLIENT COMMENTS
Turnaround Time																
# of Containers																
Container Type					1-L Amber	1-L Amber	250mL Poly	250mL Poly	250mL Poly	4oz jar	8oz jar	16oz jar				
Preservative Used					—	—	HNO_3	HNO_3	NaOH		—					
YS04-SW02-1207	12/13/07	1200	SW	DL	2	2	1	1	1							
YS04-SD02-1207	12/13/07	1210	SD	DL						1	1	1				
YS08-SW04-1207	12/13/07	1305	SW	DL	2	2	1	1	1							
YS08-SD04-1207	12/13/07	1315	SD	DL						1	1	1				
YS08-SW03-1207	12/13/07	1410	SW	DL	2	2	1	1	1							
YS08-SD03-1207	12/13/07	1420	SD	DL						1	1	1				
YS08-SW02-1207	12/13/07	1455	SW	DL	2	2	1	1	1							
YS08-SD02-1207	12/13/07	1505	SD	DL						1	1	1				
YS08-EB01-121307	12/13/07	1545	EB	DL	2	2	1	1	1							
YS04-FB01-121307	12/13/07	1530	FB	DL	2	2	1	1	1							

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	12/13/07 1800			[signature]	12/14/07 0950

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.: See attached sheet for tracking numbers

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:
				4.5, 3.1, 3.5, 2.3 °C

G.P. W.O. _____

Burlington CTO-195

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M Hill	Project Manager: Laura Cook	Date:	Chain of Custody Number: 367981
Address: 5700 Cleveland ST, Suite 101	Telephone Number (Area Code)/Fax Number: 757-671-6208	Lab Number:	Page 1 of 2
City: Virginia Beach; State: VA; Zip Code: 23462	Site Contact: David Livingston	Lab Contact: Chelsea Bennet	
Project Name and Location (State): NWS Yorktown - Remedial Investigation	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: CTO-195			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sold.	Soil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): Explo, PETN, 3,5-DNA	Pest + PCBs	Total Metals	Dissolved Metals	Cyanide	Explo, PETN, 3,5-DNA, Nitroglycerin, Nitrocellulose	Nickel, Cyanide, Pest, PCBs	TOC, Grain size, pH, AVS SEM	Special Instructions/ Conditions of Receipt
YSA14-SW05-1207	12/14/07	1030		X									2	2	1	1	1				
YSA14-SD05-1207	12/14/07	1040			X													1	1	1	
YSA14-SW02-1207	12/14/07	1110		X									2	2	1	1	1				
YSA14-SD02-1207	12/14/07	1120			X													1	1	1	
YSA14-SW03-1207	12/14/07	1215		X									2	2	1	1	1				
YSA14-SD03-1207	12/14/07	1225			X													1	1	1	
YBKG-SW02-1207	12/14/07	1245		X									2	2	1	1	1				
YBKG-SD02-1207	12/14/07	1255			X													1	1	1	
YSA14-EB01-121407	12/14/07	1400		X									2	2	1	1	1				
YSA14-FB01-121407	12/14/07	1140		X									2	2	1	1	1				

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other_____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By	12/14/07	1200	1. Received By	12/15/07	0905
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments:

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Burlington CTO - 195

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M Hill	Project Manager: Laura Cook	Date: 12/14/07	Chain of Custody Number: 367983
Address: 5700 Cleveland St, Suite 101	Telephone Number (Area Code)/Fax Number: 757-671-6208	Lab Number:	Page 2 of 2
City: Virginia Beach; State: VA; Zip Code: 23462	Site Contact: David Livingston	Lab Contact: Chelsea Bennet	
Project Name and Location (State): NWS Yorktown - Remedial Investigation	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: CTO - 195			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Solid	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Explo, PETN, 3,5-DNA	Pest, PCB	Total Metals	Dissolved Metals	Cyanide	Explo, 3,5-DNA, PETN, Nitrobenzene, Nitrogen	Metals, Cyanide, Pest, PCB	TOC, Grain size, pH, AVS SEM					Special Instructions/ Conditions of Receipt
YBKG-SW03-1207	12/14/07	1310		X									2	2	1	1	1								
YBKG-SD03-1207	12/14/07	1320			X													1	1	2					
YBKG-SW06-1207	12/14/07	1335		X									2	2	1	1	1								
YBKG-SD06-1207	12/14/07	1345			X													1	1	2					

Analysis (Attach list if more space is needed)

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

1. Relinquished By	Date: 12/14/07	Time: 1700	1. Received By	Date: 12/15/07	Time: 0905
2. Relinquished By	Date:	Time:	2. Received By	Date:	Time:
3. Relinquished By	Date:	Time:	3. Received By	Date:	Time:

Comments: Ran out of 16oz jars for TOC, pH, Grain size, AVS SEM → used two 8oz jars for YBKG-SD03-1207 and YBKG-SD06-1207

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDGs affected

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: December 17, 2007

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station, CTO-195.

Some analyses were listed incorrectly on the COCs for samples collected on December 14, 2007 and need to be corrected in the lab hardcopy report, and any electronic deliverables.

- Samples YSA14-EB01-121407 and YSA14-FB01-121407 should be analyzed for Nitroglycerin 8332 and Nitroguanadine IAPP.

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CASE NARRATIVE
TestAmerica Burlington

SDG# YORK17

Sample Receiving:
TestAmerica Pittsburgh received samples on December 14, 15, and 18, 2007. The coolers were received within the proper temperature range.

If project specific QC was not required for samples contained in this report and batch QC was completed on these samples, anomalous results will be discussed below.

Pesticides/PCBs:
There were no problems associated with the analysis.

Intercompany Chain of Custody

SDG/Job Reference YORK17
PO Reference 123391
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/09/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YS22-SW04-1207	735129	WATER	12/12/2007	1210	X
YS22-SW05-1207	735131	WATER	12/12/2007	1115	X
YS22-SW06-1207	735133	WATER	12/12/2007	1030	X
YS22-EB01-121207	735135	WATER	12/12/2007	1600	X

Relinquished By: Date: 12/13/7 Time: 1530 Received By: Date: 12/14/07 Time: 1030

Cooler Receipt Form
TestAmerica Pittsburgh

Client: STL Burlington Project: Quote:

Cooler Rec'd & Opened for Temp. Check on: 12/14/07

Coolers Opened and Unpacked on: 12/14/07 By: (Signature)

TestAmerica Pittsburgh Lot Number: C7L140402

		Yes	No
1.	Were custody seals on the outside of the cooler?	✓	
	If YES, how many and where? Quantity __ Location		
	Were signatures and date correct?	✓	
2.	Were custody papers included inside the cooler?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did you sign the custody papers in the appropriate place?	✓	
5.	Was shippers packing slip attached to this form?	✓	
6.	Were packing materials used?	✓	
	If YES, what type? Bubble Pak		
7.	Were the samples chilled? (Record temperatures on reverse side.)	✓	
8.	Were the samples appropriately preserved?	✓	
9.	Were all bottles sealed in separate plastic bags?	✓	
10.	Did all bottles arrive in good condition (unbroken)?	✓	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓	
12.	Did all bottle labels and/or tags agree with custody papers?	✓	
13.	Were correct bottles used for tests indicated?	✓	
14.	Were all VOA vials checked for the presence of air bubbles?	✓	
15.	Was a sufficient amount of sample sent in each bottle?	✓	

16. Samples received by: FEDEX UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies:

Level 2 Review

Was contacted on _____ by _____ to resolve discrepancies.

TA PT/Nov-07/96-005/COOL.DOC

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved

UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
B'W	4.4	#9 - 2

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

TA PT/Nov-07/96-005/COOL.DOC

YORK17

Intercompany Chain of Custody

SDG/Job Reference YORK17
PO Reference 123420
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/10/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YS04-SW02-1207	735355	WATER	12/13/2007	1200	X
YS08-SW04-1207	735357	WATER	12/13/2007	1305	X
YS08-SW03-1207	735359	WATER	12/13/2007	1410	X
YS08-SW02-1207	735361	WATER	12/13/2007	1455	X
YS08-EB01-121307	735363	WATER	12/13/2007	1545	X
YS04-FB01-121307	735365	WATER	12/13/2007	1530	X

Relinquished By: [signature] Date: ~~12/13~~ 12/14/07 Time: 1600
Received By: [signature] Date: 12/15/07 Time: 1035

Cooler Receipt Form

TestAmerica Pittsburgh

Client: T/A Burlington Project: _____ Quote: 77452

Cooler Rec'd & Opened for Temp. Check on: 12-15-07

Coolers Opened and Unpacked on: 12-15-07 By: _____ (Signature)

TestAmerica Pittsburgh Lot Number: C7L150137

		Yes	No
1.	Were custody seals on the outside of the cooler?	✓	
	If YES, how many and where? Quantity 1 Location Front		
	Were signatures and date correct?	✓	
2.	Were custody papers included inside the cooler?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did you sign the custody papers in the appropriate place?	✓	
5.	Was shippers packing slip attached to this form?	✓	
6.	Were packing materials used?	✓	
	If YES, what type? Bubble Bag		
7.	Were the samples chilled? (Record temperatures on reverse side.)	✓	
8.	Were the samples appropriately preserved?	✓	
9.	Were all bottles sealed in separate plastic bags?	✓	
10.	Did all bottles arrive in good condition (unbroken)?	✓	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓	
12.	Did all bottle labels and/or tags agree with custody papers?	✓	
13.	Were correct bottles used for tests indicated?	✓	
14.	Were all VOA vials checked for the presence of air bubbles?	✓	
15.	Was a sufficient amount ~~of sample~~ sent in each bottle?	✓	

16. Samples received by: FEDEX UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies: _____

Level 2 Review _____

Was contacted on _____ by _____ to resolve discrepancies.

TA PT/Nov-07/96-005/COOL.DOC

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	3.8	1
2	4.1	5

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

TA PT/Nov-07/96-005/COOL.DOC

Intercompany Chain of Custody

SDG/Job Reference YORK17
PO Reference 123448
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/14/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YSA14-SW05-1207	735613	WATER	12/14/2007	1030	X
YSA14-SW02-1207	735615	WATER	12/14/2007	1110	X
YSA14-SW03-1207	735617	WATER	12/14/2007	1215	X
YBKG-SW02-1207	735619	WATER	12/14/2007	1245	X
YSA14-EB01-121407	735621	WATER	12/14/2007	1400	X
YSA14-FB01-121407	732623	WATER	12/14/2007	1140	X
YBKG-SW03-1207	735625	WATER	12/14/2007	1310	X
YBKG-SW06-1207	735627	WATER	12/14/2007	1335	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	12/17/7	1520	Patricia [illegible]	12/17/07	1020

Cooler Receipt Form
TestAmerica Pittsburgh

Client: TestAmerica - Burlington Project: _____ Quote: 77432

Cooler Rec'd & Opened for Temp. Check on: 12/18/07

Coolers Opened and Unpacked on: 12/18/07 By: PRF (Signature)

TestAmerica Pittsburgh Lot Number: C7L180268

		Yes	No
1.	Were custody seals on the outside of the cooler?	✓	
	If YES, how many and where? Quantity 1 Location front		
	Were signatures and date correct?	✓	
2.	Were custody papers included inside the cooler?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did you sign the custody papers in the appropriate place?	✓	
5.	Was shippers packing slip attached to this form?	✓	
6.	Were packing materials used?		
	If YES, what type? Bubble Wrap		
7.	Were the samples chilled? (Record temperatures on reverse side.)	✓	
8.	Were the samples appropriately preserved?	NA	
9.	Were all bottles sealed in separate plastic bags?		✓
10.	Did all bottles arrive in good condition (unbroken)?	✓	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓	
12.	Did all bottle labels and/or tags agree with custody papers?	✓	
13.	Were correct bottles used for tests indicated?	✓	
14.	Were all VOA vials checked for the presence of air bubbles?	NA	
15.	Was a sufficient amount of sample sent in each bottle?	✓	

16. Samples received by: FEDEX UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies: _____

Level 2 Review _____

Was contacted on _____ by _____ to resolve discrepancies.

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	3.0°	1
2	2.6°	6

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

Case Narrative

TestAmerica West Sacramento Project Number G7L140228

There were no anomalies associated with this project.

Intercompany Chain of Custody

SDG/Job Reference: YORK17
PO Reference: 123391
Project ID: SUBR7
Project Name: Yorktown NWS
Due Date: 01/09/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
YS22-SW04-1207	735129	WATER	12/12/2007	1210	X	
YS22-SW05-1207	735131	WATER	12/12/2007	1115	X	
YS22-SW06-1207	735133	WATER	12/12/2007	1030	X	
YS22-EB01-121207	735135	WATER	12/12/2007	1600	X	X
YS12-GW22-1207	735137	WATER	12/12/2007	1225	X	X
YS12-EB01-121207	735139	WATER	12/12/2007	1330	X	X
YS12-GW21-1207	735141	WATER	12/12/2007	1620	X	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	12/13/7	1530	C Henry	12/14/07	1110

Intercompany Chain of Custody

SDG/Job Reference **YORK17**
PO Reference 123420
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/10/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
YS04-SW02-1207	735355	WATER	12/13/2007	1200	X	
YS08-SW04-1207	735357	WATER	12/13/2007	1305	X	
YS08-SW03-1207	735359	WATER	12/13/2007	1410	X	
YS08-SW02-1207	735361	WATER	12/13/2007	1455	X	
YS08-EB01-121307	735363	WATER	12/13/2007	1545	X	X
YS04-FB01-121307	735365	WATER	12/13/2007	1530	X	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	12/14/07	1645	[illegible]	12-15-07	1000

Intercompany Chain of Custody

SDG/Job Reference YORK17
PO Reference 123448
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/14/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
YSA14-SW05-1207	735613	WATER	12/14/2007	1030	X	
YSA14-SW02-1207	735615	WATER	12/14/2007	1110	X	
YSA14-SW03-1207	735617	WATER	12/14/2007	1215	X	
YBKG-SW02-1207	735619	WATER	12/14/2007	1245	X	
YSA14-EB01-121407	735621	WATER	12/14/2007	1400	X	X
YSA14-FB01-121407	732623	WATER	12/14/2007	1140	X	X
YBKG-SW03-1207	735625	WATER	12/14/2007	1310	X	
YBKG-SW06-1207	735627	WATER	12/14/2007	1335	X	

Relinquished By: [signature] Date: 12/17/7 Time: 1600 Received By: Chenshue Date: 12/18/07 Time: 8:40

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT TAL-Burlington PM DA LOG # 49524 49458

LOT# (QUANTIMS ID) G7L140228 QUOTE# 77439 LOCATION W20B

			Initials	Date
DATE RECEIVED 12/14/07 12/18/07	TIME RECEIVED 0930 0930		CN	12/14/07

DELIVERED BY ☑ FEDEX ☐ CA OVERNIGHT ☐ CLIENT ☐ AIRBORNE ☐ GOLDENSTATE ☐ DHL ☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS ☐ TAL COURIER ☐ VALLEY LOGISTICS ☐ MORGAN HILL COURIER ☐ OTHER

CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A

CUSTODY SEAL #(S) Seal

SHIPPPING CONTAINER(S) ☑ TAL ☐ CLIENT ☐ N/A

TEMPERTURE RECORD (IN °C) IR 4 ☐ 5 ☑ ☐ OTHER

COC #(S) NO

TEMPERATURE BLANK Observed: Corrected:

SAMPLE TEMPERATURE Observed: See list Average: Corrected Average:

COLLECTOR'S NAME: ☐ Verified from COC ☑ Not on COC

pH MEASURED ☐ YES ☐ ANOMALY ☑ N/A

LABELED BY

LABELS CHECKED BY

PEER REVIEW ☑ NA

SHORT HOLD TEST NOTIFICATION

SAMPLE RECEIVING

WETCHEM ☑ N/A

VOA-ENCORES ☑ N/A

☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL ☑ N/A

☑ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES ☐ N/A

☐ CLOUSEAU ☐ TEMPERATURE EXCEEDED (2 °C – 6 °C)*1 ☑ N/A

☐ WET ICE ☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED

Notes:

*1 Acceptable temperature range for State of Wisconsin samples is≤4°C.

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

QA-185 5/05 EM, Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

MULTI COOLER RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT: TAL - Burlington LOT# (QUANTIMS ID): G7L140228

	INITIALS	DATE
TEMPERTURE RECORD (IN °C) IR 4 ☐ 5 ☑ ☐ OTHER	CV	12/14/07

COOLER ID 1
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) Seal
COC #(S)
TEMPERATURE BLANK: OBSERVED: CORRECTED:
SAMPLE TEMPERATURE:
OBSERVED: 3 1 2 AVERAGE: 2 CORRECTED: 2
SAMPLES / TESTS (IF NCM REQUIRED):

COOLER ID 2
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) Seal
COC #(S)
TEMPERATURE BLANK: OBSERVED: CORRECTED:
SAMPLE TEMPERATURE:
OBSERVED: 2 4 3 AVERAGE: 3 CORRECTED: 3
SAMPLES / TESTS (IF NCM REQUIRED):

COOLER ID 3
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) Seal
COC #(S)
TEMPERATURE BLANK: OBSERVED: CORRECTED:
SAMPLE TEMPERATURE:
OBSERVED: 0 4 2 AVERAGE: 2 CORRECTED: 2
SAMPLES / TESTS (IF NCM REQUIRED):

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT TAL - Burlington PM DA LOG # 49489

LOT# (QUANTIMS ID) G7L140206 QUOTE# 7439 LOCATION W5A

G7L140228

		Initials	Date
DATE RECEIVED 12-15-07 TIME RECEIVED 930		CA	12-15-07
DELIVERED BY	☑ FEDEX ☐ CA OVERNIGHT ☐ CLIENT ☐ AIRBORNE ☐ GOLDENSTATE ☐ DHL ☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS ☐ TAL COURIER ☐ VALLEY LOGISTICS ☐ MORGAN HILL COURIER ☐ OTHER		
CUSTODY SEAL STATUS	☑ INTACT ☐ BROKEN ☐ N/A		
CUSTODY SEAL #(S) Seal			
SHIPPPING CONTAINER(S)	☑ TAL ☐ CLIENT ☐ N/A		
TEMPERTURE RECORD (IN °C)	IR 4 ☐ 5 ☑ ☐ OTHER		
COC #(S)	N/A		
TEMPERATURE BLANK	Observed: ✓ Corrected:		
SAMPLE TEMPERATURE Observed: 1 2 2 2	Average: 2 2 Corrected Average: 2 2		
COLLECTOR'S NAME:	☐ Verified from COC ☑ Not on COC		
pH MEASURED	☐ YES ☐ ANOMALY ☑ N/A		
LABELED BY			
LABELS CHECKED BY			
PEER REVIEW	☑ NA		
SHORT HOLD TEST NOTIFICATION	SAMPLE RECEIVING		
	WETCHEM ☑ N/A		
	VOA-ENCORES ☑ N/A		
☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL	☑ N/A		
☑ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES	☐ N/A		
☐ CLOUSEAU	☐ TEMPERATURE EXCEEDED (2 °C – 6 °C)*1 ☑ N/A	✓	✓
☐ WET ICE	☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED		

Notes:

*1 Acceptable temperature range for State of Wisconsin samples is≤4°C.

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

MULTI COOLER RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT: TAL - Burlington LOT# (QUANTIMS ID): G7L140228

	INITIALS	DATE
TEMPERTURE RECORD (IN °C) IR 4 ☐ 5 ☑ ☐ OTHER	CV	12/18/07

COOLER ID 1
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) Seal
COC #(S)
TEMPERATURE BLANK: OBSERVED: CORRECTED:
SAMPLE TEMPERATURE:
OBSERVED: 3 4 2 AVERAGE: 3 CORRECTED: 3
SAMPLES / TESTS (IF NCM REQUIRED):

COOLER ID 2
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) Seal
COC #(S)
TEMPERATURE BLANK: OBSERVED: CORRECTED:
SAMPLE TEMPERATURE:
OBSERVED: 2 1 4 AVERAGE: 2 CORRECTED: 2
SAMPLES / TESTS (IF NCM REQUIRED):

COOLER ID
CUSTODY SEAL STATUS ☐ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S)
COC #(S)
TEMPERATURE BLANK: OBSERVED: CORRECTED:
SAMPLE TEMPERATURE:
OBSERVED: AVERAGE: CORRECTED:
SAMPLES / TESTS (IF NCM REQUIRED):

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

QA-185 1/06 DAW, Page 2

TestAmerica West Sacramento

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Bottle Lot Inventory

Lot ID: G7L140228

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOA*																				
VOAh*																				
AGB	2	2	2	2	4	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2
AGBs																				
250AGB																				
250AGBs																				
250AGBn																				
500AGB																				
____AGJ																				
500AGJ																				
250AGJ																				
125AGJ																				
____CGJ																				
500CGJ																				
250CGJ																				
125CGJ																				
PJ																				
PJn																				
500PJ																				
500PJn																				
500PJna																				
500PJzn/na																				
250PJ																				
250PJn																				
250PJna																				
250PJzn/na																				
Acetate Tube																				
_____"CT																				
Encore																				
Folder/filter																				
PUF																				
Petri/Filter																				
XAD Trap																				
Ziploc																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

h = hydrochloric acid s = sulfuric acid na = sodium hydroxide n = nitric acid zn = zinc acetate

Number of VOAs with air bubbles present / total number of VOA's

QA-185 5/05 EM

Page 3

LEAVE NO SPACES BLANK. USE "NA" IF NOT APPLICABLE.

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 12/12-14/07
Received Date: 12/13-15/07
Analysis Dates: 12/18-20/07

Cooler Temp: 0.3-3.6°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications required for the initial continuing calibrations.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method blanks. The QC blanks associated with this SDG were: YS12-TB01-121207 (no positive results), YS08-TB01-121307 (no positive results), YS22-TB01-1221207 (no positive results) and YSA14-TB01-121407 (no positive results)- trip blanks; YS12-EB01-121207 (no positive results)- equipment blank; YS04-FB01-121307 (no positive results) and YSA14-FB01-121407 (no positive results) - field blanks.

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments. Dilutions were required for YS12-GW22-1207 and YS12-GW21-1207 to obtain results within the calibration range.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Yana Muschkoff **Date:** 2/16/08

Initial Calibration Date: 12/1/2007

RRF and %RSD Calculations:

Compound Name: vinyl chloride
Lab Value: 1.712

Area of Compound	385108
Area of Internal STD	56243
Conc. of Internal STD	50
Conc. of Compound	200
Calculated RRF	1.712

Compound Name: chloromethane
Lab Value: 5.1

RRF of STD 1	1.571
RRF of STD 2	1.549
RRF of STD 3	1.549
RRF of STD 4	1.636
RRF of STD 5	1.740
Calculated % RSD	5.1

Continuing Calibration File ID: 12/18/2007

RRF and %D Calculations:

Compound Name: methylene chloride
Lab Value: 1.915

Area of Compound	105165
Area of Internal STD	54917
Conc. of Internal STD	50
Conc. of Compound	50
Calculated RRF	1.915

Compound Name: 2-butanone
Lab Value: 17.8

Average RRF	1.104
Calibration Check RRF	0.907
Calculated % D	17.8

SAMPLE CALCULATION

Sample ID: YS12-GW22-1207
Standard ID: 12/18/2007
Compound: cis-1,2-dichloroethene
Concnetration: 280 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	572765		
Area of Internal STD	50664		
Conc. of Internal (ng)	250	250	
RRF of Compound	2.004		
Dilution Factor	1	1	
Weight of Sample	NA	5.1	
Volume of Sample	5	NA	
% Moisture	NA		
Aliquot of methol	NA	NA	
Concentration	282.07	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	3.462	3.273	0.945
Standard	3.456	3.273	0.947

CASE NARRATIVE
Volatiles Fraction (OLM04.3)
SDG: YORK17
STL Lab Reference No.: 680-32687, 680-32714, 680-32771, 680-32816
Project: Yorktown Sites, CTO 195

I. RECEIPT
No receipt or storage anomalies were noted.

II. HOLDING TIMES
A. Sample Preparation: All holding times were met.
B. Sample Analysis: All holding times were met.

III. METHODS
Preparation: OLM04.3_Vol
Cleanup: None
Analysis: OLM04.3_Vol

IV. PREPARATION
Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All initial and continuing calibration criteria were met for target compounds.

The response factor (RRF) was low for trichloroethene in the initial calibration analyzed in clock 1S120107 and in the continuing calibration in clocks 1S121207 and 1S121407.

B. Blanks: No target compounds were detected in the method blanks.

C. Surrogates: All surrogates recovered within quality control (QC) limits.

D. Spikes: Laboratory control standards (LCS) were analyzed for quality assurance purposes and all target compounds recovered within quality control (QC) limits.

E. Samples: Samples 68032687-2 DL (1:10) and -4 DL (1:50) were analyzed at secondary dilutions due to target analyte abundance.

F. Internal Standards: Internal standards for all samples were within quality control (QC) limits.

G. Notes: Laboratory storage blanks were analyzed with these samples. The raw data for the laboratory storage blanks are included in the data package at the end of the Raw Sample Data section.

CLP method OLM04.3 was utilized for this project, however our forms and raw data generated using the target software currently lists CLP 4.2 as the statement of work.

All tentatively identified compounds (TICs) in this sample delivery group are estimated values.

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 12/12-14/07
Received Date: 12/13-15/07
Extraction Date: 12/18-19/07 and 01/15/08
Analysis Dates: 01/13-16/08

Cooler Temp: 0.3-3.6°C

All holding time requirements were met with the exception of YS12-EB01-121207RE and YS22-SW04-1207RE. The re-extraction of these samples grossly exceeded the Region III water extraction holding time of 7-day by 27 days; therefore positive results were qualified as estimated (J) and non-detected results were rejected (R).

Calibrations

Mass assignments were verified by the injection of DFTPP.

No qualifications required for the initial continuing calibrations.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method blanks. The QC blanks associated with this SDG were: YS12-EB01-121207 (no positive results)- equipment blank; YS04-FB01-121307 (no positive results) and YSA14-FB01-121407 (no positive results) - field blanks.

The associated method and QC blanks exhibited contamination for TICs. All B flagged TICs in the field samples are flagged B and crossed out in accordance with the Region III modifications to the National Functional Guidelines.

Surrogates

Many of the samples exhibited slightly low recoveries for terphenyl-d14; however no qualifications were required per the method. Sample YS12-EB01-121207 exhibited below 10% recovery for 2-fluorophenol (0%), phenol-d5 (0%), 2-chlorophenol-d4 (0%), 1,2-dichlorobenzene-d4 (0%), nitrobenzene-d5 (1%) and 2-flurobiphenyl (8%); therefore all positive results were qualified as biased low (L) and non-detected compounds were rejected (R). Sample YS22-SW04-1207 exhibited low recoveries for 2-fluorobiphenyl (10%) and terphenyl-d14 (28%) and below 10% recoveries for 2-fluorophenol (1%), phenol-d5 (5%), 2-chlorophenol-d4 (2%), 1,2-dichlorobenzene-d4 (0%), and nitrobenzene-d5 (1%); therefore all positive results were qualified as biased low (L) and non-detected compounds were rejected (R). These two samples were re-extracted with compliant surrogate results, however the extraction grossly exceeded holding time and therefore was not used.

Laboratory Control Sample

An LCS was not submitted for this data package.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments. Samples YS12-EB01-121207RE and YS22-SW04-1207RE were not used in favor of the initial analysis due to grossly exceeded extraction holding times.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Maschoff **Date:** 2/16/08

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Savannah Job No.: 680-32687-1

SDG No.: YORK17

Matrix: Water Level: Low

GC Column (1): Equity 5MS ID: 0.25(mm)

Client Sample ID	Lab Sample ID	2FP #	PHL #	2CP4 #	12DCB #	NBZ #	FBP #	TBP #	TPH #	
YS12-GW22-1207	680-32687-2	66	61	63	49	72	67	71	81	
YS12-EB01-121207	680-32687-3	0 *	0 *	0 *	0 *	1 *	8 *	48	69	L/R
YS12-EB01-121207 RE	680-32687-3 RE	47	50	51	42	64	62	65	86	
YS12-GW21-1207	680-32687-4	62	60	65	54	71	71	68	84	
YS22-SW04-1207	680-32714-1	1 *	5 *	2 *	0 *	1 *	10 *	65	28 *	L/R
YS22-SW04-1207 RE	680-32714-1 RE	78	81	78	59	92	85	94	61	
YS22-SW05-1207	680-32714-3	75	73	72	54	75	66	70	31 *	ma
YS22-SW06-1207	680-32714-5	64	61	62	50	65	61	63	23 *	ma
YS22-EB01-121207	680-32714-8	60	58	60	49	66	60	60	69	
YS04-SW02-1207	680-32771-1	63	61	60	48	68	61	66	27 *	ma
YS08-SW04-1207	680-32771-3	63	61	62	46	66	58	65	27 *	ma
YS08-SW03-1207	680-32771-5	58	60	61	46	66	59	67	27 *	ma
YS08-SW02-1207	680-32771-7	85	85	87	57	94	75	87	24 *	ma
YS08-EB01-121307	680-32771-9	67	63	64	52	74	63	67	72	
YS04-FB01-121307	680-32771-11	49	45	50	42	55	49	49	64	
YSA14-SW05-1207	680-32816-1	59	57	57	42	64	56	62	28 *	ma
YSA14-SW02-1207	680-32816-3	67	64	64	48	70	61	68	27 *	ma
YSA14-SW03-1207	680-32816-5	64	60	62	48	69	61	65	32 *	ma
YBKG-SW02-1207	680-32816-7	57	58	59	45	67	59	68	24 *	ma
YSA14-EB01-121407	680-32816-9	76	71	75	59	83	74	79	88	
YSA14-FB01-121407	680-32816-11	81	72	79	66	89	81	84	87	
YBKG-SW03-1207	680-32816-12	70	68	70	52	75	65	74	26 *	ma
YBKG-SW06-1207	680-32816-14	63	66	68	52	75	66	78	26 *	ma
	MB 680-93898/21-A	78	69	74	58	82	74	77	92	
	MB 680-94012/2-A	91	89	93	72	103	92	94	103	
	MB 680-95811/3-A	68	65	64	52	79	73	77	81	

	QC LIMITS
2FP = 2-Fluorophenol	21-110
PHL = Phenol-d5	10-110
2CP4 = 2-Chlorophenol-d4	33-110
12DCB = 1,2-Dichlorobenzene-d4	16-110
NBZ = Nitrobenzene-d5	35-114
FBP = 2-Fluorobiphenyl	43-116
TBP = 2,4,6-Tribromophenol	10-123
TPH = Terphenyl-d14	33-141

Column to be used to flag recovery values

Initial Calibration Date: 1/13/2008

RRF and %RSD Calculations:

Compound Name: phenol
Lab Value: 1.982

Area of Compound	1451106
Area of Internal STD	182987
Conc. of Internal STD	20
Conc. of Compound	80
Calculated RRF	1.983

Compound Name: benzo(g,h,I)perylene
Lab Value: 2.4

RRF of STD 1	1.343
RRF of STD 2	1.341
RRF of STD 3	1.363
RRF of STD 4	1.343
RRF of STD 5	1.419
Calculated % RSD	2.44

Continuing Calibration File ID: 1/14/2008

RRF and %D Calculations:

Compound Name: benzo(b)fluoranthene
Lab Value: 1.453

Area of Compound	1554761
Area of Internal STD	856126
Conc. of Internal STD	20
Conc. of Compound	25
Calculated RRF	1.453

Compound Name: 4-nitroaniline
Lab Value: 0.8

Average RRF	0.351
Calibration Check RRF	0.354
Calculated % D	-0.85

SAMPLE CALCULATION

Sample ID: YS12-GW22-1207
Standard ID: 1/13/2008
Compound: 2-fluorophenol
Concnetration: 47 ug/L

	Water (ug/L)	Soil (ug/Kg)
Area of Compound	693013	
Area of Internal STD	225314	
Conc. of Internal (ng)	20	40
RRF of Compound	1.287	
Final Volume	1000	1000
Dilution Factor	1	1
GPC Factor	NA	2
Injection Volume	1	2
Weight of Sample	NA	5
Initial Volume of Sample	1000	NA
% Moisture	NA	0.221
Concentration	47.8	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	4.867	3.809	0.783
Standard	4.867	3.811	0.783

CASE NARRATIVE
Fraction: SEMI VOLATILES By GC/MS (OLM04.3)
SDG: YORK17
STL Lab Reference No.: 680-32687-1, 680-32714, 680-32721, and 680-32816
Project: Yorktown Sites, CTO 195

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. HOLDING TIMES

A. Sample Preparation: Due to low surrogate recoveries, samples 680-32687-3RE and 680-32714-1RE were extracted outside of holding times. The data have been qualified with an "H" data qualifier.

B. Sample Analysis: All holding times were met.

III. METHODS

Preparation: CLP-OLM04.3
Cleanup: N/A
Analysis: CLP-OLM04.3

IV. PREPARATION

Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Surrogates: Samples 680-32687-3 and 680-32714-1 had several surrogates recover outside of control limits. The samples were reextracted with acceptable results. Samples 680-32714-3, -5, 680-32771-1, -3, -5, -7, 680-32816-1, -3, -5, -7, -12, and -14 had the surrogate terphenyl-d14 recover outside of control limits. According to the laboratory's SOP, one acid and one base surrogate are allowed to recover outside of control limits. These results are qualified with a "*" on the form 2.

D. Samples: Dilutions were not required for the samples in this sample delivery group.

E. Internal Standards: All acceptance criteria were met

F. Spike: Matrix spikes were not performed due to limited sample volume.

This SDG contains total and dissolved metals, mercury and cyanide analysis using ILM05.3. Please note that method criteria were used to assess all calibration standards because Region III does not have a validation document for the ILM05.3 SOW. Region III qualification conventions and qualifiers were used.

HOLDING TIMES

Sampling Date: 12/12, 12/13, 12/14
Received Date: 12/13, 12/14 & 12/15 Cooler temps OK, receipt documentation present.
Prep. Dates: 1/7 & 1/8 ICP, 1/4 & 1/5 Hg, 12/19 & 12/26 CN All holding time requirements were met.
Analysis Dates: 1/22-1/29 ICP, 1/7 - 1/10 Hg, 12/19, 12/20 & 12/26 CN

CALIBRATIONS

An initial calibration single point calibration was analyzed for ICP metals. Initial calibration curve was analyzed for Hg and CN. All initial calibration criteria were met. Calibration verification criteria were met for all ICV and CCV standards. The ICSAB standards exhibited acceptable recoveries for all analytes. The CRI check standards were analyzed and met method criteria with one exception. Na was above the QC limit in one or more of the associated CRI standards. Positive results up to 2X CRDL were qualified as biased high K (in associated samples only). Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the CRDL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the CRQL, result is reported as non-detect at the CRQL.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBLK 1/8 BATCH	cadmium	0.339J ug/L	1.695 ug/L	B
PBLK 1/7 A & B BATCHES	chromium	0.155J ug/L	0.775 ug/L	B
ICB 1/8 batch run	arsenic	2.046J ug/L	10.23 ug/L	B
	chromium	0.301J ug/L	1.505 ug/L	B
	iron	11.57J ug/L	57.85 ug/L	B
CCB 1/8 batch	iron	26.250J ug/L	131.25 ug/L	B
	aluminum	35.090J ug/L	175.45 ug/L	B
ICB 1/7 A & B batches	silver	0.472J ug/L	2.36 ug/L	B
	chromium	0.60J ug/L	1.8 ug/L	B
	iron	10.3J ug/L	51.5 ug/L	B
	vanadium	0.768J ug/L	3.84 ug/L	B
CCB 1/7 A & B batches	iron	24.150J ug/L	120.75 ug/L	B
	aluminum	53.780J ug/L	268.9 ug/L	B
	zinc	-0.319J ug/L	10 X MDL (46 ug/L)	L/UL

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBLK, ICB & CCB ALL RUNS	mercury	-0 143J ug/L	10X MDL (0.29 ug/L)	L/UL
ICB	thallium	-2.137J ug/L	10X MDL (18 ug/L)	L/UL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB, if less than the analyte CRDL, is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

See validation report for specific samples and qualifications.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MD pair in this SDG exhibited acceptable results. All associated LCS samples exhibited acceptable recoveries for all analytes.

SERIAL DILUTIONS

The serial dilution analysis in this SDG exhibited acceptable %Ds for all analytes.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL.
Sample ID: none Duplicate Sample ID:
Comments: No qualifications were required.

SAMPLE CALCULATION

EPA SAMPLE ID: YBKG-SW02-1207
COMPOUND: aluminum
CONCENTRATION: 411 ug/L
%Solids – NA
100 ml to 100 ml
Raw Data result: 411.1 ug/L

Water sample results are direct read from instrument.

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the IDL and the CRDL were qualified as estimated, J by the laboratory.

Reviewer Jacqueline Cleveland **Date:** 2/26/08

USEPA-CLP FORMS

2B-IN

CRQL CHECK STANDARD

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG No.: YORK17

CRQL Check Standard Source: Inorganic Ventu

Concentration Units: ug/L

Analyte	CRQL Check Standard				
	Initial			Final	
	True	Found*	%R (1)	Found*	%R (1)
Silver	10	9.74 J	97	10.00 J	100
Aluminum	200	207.80	104	211.80	106
Antimony	60	59.31 J	99	57.79 J	96
Arsenic	10	10.63	106	10.49	105
Barium	200	193.90 J	97	189.10 J	95
Beryllium	5	5.15	103	5.03	101
Calcium	5000	5026.00	101	4922.00 J	98
Cadmium	5	4.82 J	96	4.83 J	97
Cobalt	50	48.15 J	96	47.96 J	96
Chromium	10	9.77 J	98	9.84 J	98
Copper	25	23.07 J	92	22.95 J	92
Iron	100	104.60	105	96.06 J	96
Magnesium	5000	5020.00	100	5010.00	100
Manganese	15	13.94 J	93	14.18 J	95
Sodium	5000	4999.00 J	100	7525.00	150
Nickel	40	38.36 J	96	39.47 J	99
Lead	10	7.53 J	75	7.38 J	74
Potassium	5000	4972.00 J	99	4887.00 J	98
Selenium	35	37.38	107	36.36	104
Thallium	25	23.52 J	94	22.33 J	89
Vanadium	50	49.30 J	99	49.22 J	98
Zinc	60	57.89 J	96	58.36 J	97

Pb + a 2X CRDL

QC 33608

YSA14-EB01-121100 1
EB01F
FB01
FB01F

(1) Control Limits: 70-130 with the following exceptions:
ICP-AES - Antimony, Lead, and Thallium: 50-150
ICP-MS - Cobalt, Manganese, and Zinc: 50-150

* if applicable, enter the concentration qualifier "J" or "U" after the concentration in these columns (e.g., 0.20U for Mercury)

USEPA-CLP FORMS

13-IN

ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG No.: YORK17

Instrument ID: TJA ICAP 7 Analysis Method: P

Start Date: 01/22/2008 End Date: 01/22/2008

EPA Sample NO.	D/F	Time	Analytes																							
			AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.0	1116	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
STD7	1.0	1119	X						X				X		X				X			X				
STD8	1.0	1122		X	X									X						X			X			
STD4	1.0	1126				X	X	X		X	X	X				X		X			X			X	X	
ICV	1.0	1129	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICB	1.0	1133	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CRI	1.0	1136	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSA	1.0	1140	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSAB	1.0	1143	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1146	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1150	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
PBW010808A	1.0	1153	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
LCSW010808A	1.0	1157	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
YSA14-SW05-1207	1.0	1200	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YSA14-SW05-1207L	5.0	1204	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YSA14-SW05-1207F	1.0	1207	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YSA14-SW02-1207	1.0	1211	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YSA14-SW02-1207F	1.0	1214	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YSA14-SW03-1207	1.0	1218	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YSA14-SW03-1207F	1.0	1222	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YBKG-SW02-1207	1.0	1225	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
CCV	1.0	1229	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1232	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
YBKG-SW02-1207F	1.0	1236	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YSA14-EB01-121407	1.0	1239	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
YSA14-EB01-121407F	1.0	1243	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
YSA14-FB01-121407	1.0	1246	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
YSA14-FB01-121407F	1.0	1250	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
YBKG-SW03-1207	1.0	1253	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YBKG-SW03-1207F	1.0	1257	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
CRI	1.0	1300	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSA	1.0	1304	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSAB	1.0	1307	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1310	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1314	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

USEPA-CLP FORMS

13-IN

ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG No.: YORK17

Instrument ID: TJA ICAP 7 Analysis Method: P

Start Date: 01/22/2008 End Date: 01/22/2008

EPA Sample NO.	D/F	Time	Analytes																							
			AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
YBKG-SW06-1207	1.0	1317	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
YBKG-SW06-1207F	1.0	1321	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
CRI	1.0	1324	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
ICSA	1.0	1328	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
ICSAB	1.0	1331	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
CCV	1.0	1334	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	
CCB	1.0	1338	X	X	X	X	X	X	X	X	X	X	X		X	X		X		X	X			X	X	

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

1/8/08 X120M ~~1/7/08~~ JAC 22608

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	P
Aluminum	200.000	U	200.000	U	200.000	U	35.090	J	200.000	U	P
Antimony	60.000	U	60.000	U	60.000	U	60.000	U	60.000	U	P
Arsenic	2.046	J	10.000	U	10.000	U	10.000	U	10.000	U	P
Barium	200.000	U	200.000	U	200.000	U	200.000	U	200.000	U	P
Beryllium	5.000	U	5.000	U	5.000	U	5.000	U	5.000	U	P
Calcium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Cadmium	5.000	U	5.000	U	5.000	U	5.000	U	0.339	J	P
Cobalt	50.000	U	0.543	J NQ	50.000	U	50.000	U	50.000	U	P
Chromium	0.301	J	10.000	U	10.000	U	10.000	U	10.000	U	P
Copper	0.946	J NQ	25.000	U	25.000	U	25.000	U	25.000	U	P
Iron	11.570	J	26.250	J	10.230	J	24.140	J	100.000	U	P
Magnesium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Manganese	0.196	J NQ	0.058	J NQ	15.000	U	0.106	J NQ	15.000	U	P
Sodium	5000.000	U	-70.190	J NQ	1080.000	J NQ	170.500	J NQ	5000.000	U	P
Nickel	40.000	U	40.000	U	40.000	U	40.000	U	40.000	U	P
Lead	10.000	U	-1.789	J NQ	10.000	U	10.000	U	10.000	U	P
Potassium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Selenium	35.000	U	35.000	U	35.000	U	35.000	U	35.000	U	P
Thallium	25.000	U	25.000	U	25.000	U	25.000	U	25.000	U	P
Vanadium	50.000	U	50.000	U	50.000	U	50.000	U	50.000	U	P
Zinc	0.266	J NQ	60.000	U	60.000	U	0.223	J NQ	60.000	U	P

YSAIH-SW05 SW05F SW02 SW02F SW03 SW03F YBKG SW02

YBKG SW02F SW03 SW03F

YBKG SW02 SW02F

✓ flag as noted in report

JAC 22608

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver			10.000	U							P
Aluminum			200.000	U							P
Antimony			60.000	U							P
Arsenic			10.000	U							P
Barium			200.000	U							P
Beryllium			5.000	U							P
Calcium			5000.000	U							P
Cadmium			5.000	U							P
Cobalt			50.000	U							P
Chromium			10.000	U							P
Copper			25.000	U							P
Iron			24.300	J See ICB							P
Magnesium			5000.000	U							P
Manganese			0.073	J NQ							P
Nickel			40.000	U							P
Selenium			35.000	U							P
Vanadium			50.000	U							P
Zinc			0.190	J NQ							P

YBKG SW06
SW06F

USEPA-CLP FORMS

13-IN

ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG No.: YORK17

Instrument ID: TJA ICAP 7 Analysis Method: P

Start Date: 01/22/2008 End Date: 01/22/2008

EPA Sample NO.	D/F	Time	Analytes																							
			AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.0	1342	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
STD7	1.0	1345	X						X				X		X				X			X				
STD8	1.0	1349		X	X									X						X			X			
STD4	1.0	1352					X	X		X	X					X		X			X			X	X	
ICV	1.0	1355	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
ICB	1.0	1359	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CRI	1.0	1402	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
ICSA	1.0	1406	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
ICSAB	1.0	1409	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1412	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1416	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
PBW010708A	1.0	1419	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
LCSW010708A	1.0	1423	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS22-SW04-1207	1.0	1426	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS22-SW04-1207L	5.0	1430	X	X	X		X	X	X	X	X		X		X	X		X	X	X	X			X	X	
YS22-SW04-1207F	1.0	1434	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS22-SW05-1207	1.0	1437	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS22-SW05-1207F	1.0	1441	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS22-SW06-1207	1.0	1444	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS22-SW06-1207F	1.0	1448	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS22-EB01-121207	1.0	1452	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1455	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1458	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS22-EB01-121207F	1.0	1502	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS12-GW22-1207	1.0	1505	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS12-GW22-1207F	1.0	1509	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS12-EB01-121207	1.0	1512	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS12-EB01-121207F	1.0	1516	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS12-GW21-1207	1.0	1519	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS12-GW21-1207F	1.0	1523	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CRI	1.0	1527	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
ICSA	1.0	1530	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
ICSAB	1.0	1533	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1537	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1540	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	

USEPA-CLP FORMS

13-IN

ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG No.: YORK17

Instrument ID: TJA ICAP 7 Analysis Method: P

Start Date: 01/22/2008 End Date: 01/22/2008

EPA Sample NO.	D/F	Time	Analytes																							
			AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
PBW010708B	1.0	1544	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
LCSW010708B	1.0	1547	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS04-SW02-1207	1.0	1551	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS04-SW02-1207F	1.0	1554	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS08-SW04-1207	1.0	1558	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS08-SW04-1207F	1.0	1601	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS08-SW03-1207	1.0	1605	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS08-SW03-1207F	1.0	1609	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS08-SW02-1207	1.0	1612	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
YS08-SW02-1207F	1.0	1616	X	X	X		X	X	X	X	X		X		X	X		X		X	X			X	X	
CCV	1.0	1620	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1623	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS08-EB01-121307	1.0	1626	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS08-EB01-121307F	1.0	1630	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS04-FB01-121307	1.0	1633	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
YS04-FB01-121307F	1.0	1637	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CRI	1.0	1640	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
ICSA	1.0	1644	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
ICSAB	1.0	1647	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.0	1651	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.0	1654	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
		C	1	C	2	C	3	C		C	M
Silver	0.472	J	10.000	U	10.000	U	10.000	U	10.000	U	P
Aluminum	200.000	U	200.000	U	200.000	U	53.780	J	200.000	U	P
Antimony	60.000	U	60.000	U	60.000	U	60.000	U	60.000	U	P
Arsenic	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	P
Beryllium	5.000	U	5.000	U	5.000	U	5.000	U	5.000	U	P
Calcium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Cadmium	5.000	U	5.000	U	5.000	U	5.000	U	5.000	U	P
Cobalt	50.000	U	50.000	U	50.000	U	50.000	U	50.000	U	P
Chromium	0.360	J	10.000	U	0.162	J	10.000	U	0.155	J	P
Iron	10.300	J	20.880	J	8.920	J	24.150	J	100.000	U	P
Magnesium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Manganese	0.191	J	0.087	J	0.060	J	0.107	J	15.000	U	P
Sodium	5000.000	U	-121.800	J	441.200	J	-66.320	J	5000.000	U	P
Nickel	40.000	U	40.000	U	40.000	U	40.000	U	40.000	U	P
Lead	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	P
Potassium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Selenium	35.000	U	35.000	U	35.000	U	35.000	U	35.000	U	P
Thallium	25.000	U	25.000	U	25.000	U	25.000	U	25.000	U	P
Vanadium	0.768	J	0.625	J	50.000	U	50.000	U	50.000	U	P
Zinc	60.000	U	-0.201	J	-0.291	J	60.000	U	60.000	U	P

YS22-SW04 SW04F SW05 SW05F SW06 SW06F

YS12GW02 GW02F GW21 GW21F

YS01SW02 SW02F YS08-SW04 SW04F SW03 SW03F SW02 SW02F

✓ flag as noted in report

JAC 3/26/10

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver			10.000	U	10.000	U			10.000	U	P
Aluminum			200.000	U	200.000	U			200.000	U	P
Antimony			60.000	U	60.000	U			60.000	U	P
Arsenic			10.000	U	10.000	U			10.000	U	P
Beryllium			5.000	U	5.000	U			5.000	U	P
Calcium			5000.000	U	5000.000	U			5000.000	U	P
Cadmium			5.000	U	5.000	U			5.000	U	P
Cobalt			50.000	U	50.000	U			50.000	U	P
Chromium			0.171	J	10.000	U			10.000	U	P
Iron			-5.546	J	13.560	J			100.000	U	P
Magnesium			5000.000	U	5000.000	U			5000.000	U	P
Manganese			15.000	U	15.000	U			15.000	U	P
Sodium			619.700	J	-38.430	J			5000.000	U	P
Nickel			40.000	U	40.000	U			40.000	U	P
Lead			10.000	U	10.000	U			10.000	U	P
Potassium			5000.000	U	5000.000	U			5000.000	U	P
Selenium			35.000	U	35.000	U			35.000	U	P
Thallium			25.000	U	25.000	U			25.000	U	P
Vanadium			50.000	U	0.650	J			50.000	U	P
Zinc			-0.319	J	-0.206	J			60.000	U	P

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Barium			200.000	U	200.000	U			200.000	U	P
Copper			0.864	J	25.000	U			25.000	U	P

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Lead	10.000	U	10.000	U	1.679	J	10.000	U			P
Thallium	25.000	U	25.000	U	25.000	U	25.000	U			P

JAC 32608

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Lead	10.000	U	10.000	U	10.000	U	10.000	U			P
Thallium	-1.910	J	25.000	U	-2.137	J	25.000	U			P

Flag as noted in report JK 22408

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	0.200	U	0.200	U	-0.033	J	-0.035	J	0.200	U	CV

flag L/UL & 10xMDL (0.38)
JAC 22608

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
Analyte		C	1	C	2	C	3	C		C	M
Mercury	-0.058	J	-0.080	J	-0.060	J	-0.090	J	-0.036	J	CV

flag L/UL on all 4 10X MDL (0.28)

JAC 3/26/08

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
Analyte		C	1	C	2	C	3	C		C	M
Mercury	-0.080	J	-0.129	J	-0.098	J	-0.143	J	-0.046	J	CV

flag LUL & 10X MDL (0.28)
JAC 22608

303

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK17

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
Analyte		C	1	C	2	C	3	C		C	M
Mercury			-0.140	J							CV

See prev page
JL 22608

Holding Times
Sampling Date: 12/12, 12/13, 12/14
Received Date: 12/13, 12/14, 12/15 at Burlington, received 12/14, 12/15, 12/18 at Pittsburgh
Extraction Date: 12/14, 12/18, 12/19
Analysis Dates: 12/22-12/23

All extraction and analysis holding times were met.

Calibrations
Initial calibrations were performed according to the CLP method with a three-point curve for all single component pesticides and a single point for toxaphene. Single point injections were analyzed for the aroclors. Calibration factors were calculated. %RSDs were within QC limits. Continuing calibration standards were analyzed per the CLP method. All PEM breakdowns and %D criteria were met. All INDA/INDB %D criteria were within QC limits. Column resolution criteria were met. Retention time windows were provided. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Raw data was verified.

Initial Calibration Date: 12/21/07, GC12
CF and %RSD Calculations: **Sequence 12/21/07-12/22/07 on GC12, RTX-1701 & RTX-50**

Compound Name: endrin ketone, mid-level, RTX-50
Lab Value: 6277500

Area of Compound	251100
Conc. of Compound	0.04
Calculated CF	6277500

Compound Name: endrin ketone
Lab Value: 4.3

CF of STD 1	5837300
CF of STD 2	6277500
CF of STD 3	6311612
% RSD	4.31

Continuing Calibration File ID: **Sequence 12/21/07-12/22/07 on GC12, RTX-1701 & RTX-50**
CONC. and %D Calculations:
Compound Name: 4,4'-DDD in INDAMXE, 12/23/07, 0154 on GC12, RTX1701
Lab Value: 0.04112

area of compound	1016942
mid-level CF	24729550
calculated conc.	0.04112

Compound Name: 4,4'-DDD in INDAMXE, 12/23/07, 0154 on GC12, RTX1701
Lab Value: 2.8

nominal amount	0.0400
calculated amount	0.04112
% D	2.8

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample, and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is less than five times (5X) the blank value. (Region III)

No contamination was reported in the associated method blank or instrument blanks. The associated field QC blanks did not exhibit target compound contamination.

Blank ID	Compound	Concentration	Action Level	Q Flag

SURROGATE RECOVERIES

All surrogate recoveries were acceptable. Samples did not require qualification due to non-compliant surrogate recoveries.

MATRIX SPIKE/MATRIX SPIKE DUPLICATES

There was no MS/MSD pair. No qualifications were required.

LABORATORY CONTROL SAMPLES

There was no LCS sample submitted for this SDG.

FIELD DUPLICATE SAMPLE SUMMARY

Compound	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!

Sample ID: none **Duplicate ID:**

Comments: No positive results

SAMPLE RESULT VERIFICATION

Reported sample results and raw data were verified. There were no positive results reported in this SDG.

SAMPLE CALCULATION

EPA SAMPLE ID: YSA14-SW05-1207
STANDARD ID: ICAL 12/21/07, mid-level CF, RTX-1701
COMPOUND: TCMX on RTX-50
CONCENTRATION: 0.1492 ng/ml

	Water (ug/L)	Soil (ug/Kg)
Area of Compound	88074	
CF of Compound	5567200	
Final Volume (ul)	10000	
Dilution Factor	1	
GPC Factor	na	
Injection Volume	1	
Weight of Sample	na	
Initial Volume of Sample (ml)	1060	NA
Dryness Factor	na	
Concentration	0.1492	

Reviewer Jacqueline Cleveland **Date:** 3 / 5 / 08

Holding Times

Sampling Date: 12/12-12/14
Received Date: 12/13-12/15
12/14, 12/15 & 12/18 at subcontractor (West Sacramento)
Extraction Dates: 12/19, 12/21 8330/8332; 12/26, Mod. 8330 (direct aspiration method)
Analysis Dates: 12/23-24/07, 8330/8332; 12/29, Mod. 8330 (direct aspiration method)

Sample receipt documentation was in order. All extraction and analysis holding time requirements were met.

Calibrations

The samples in this SDG were analyzed according to SW-846 methods 8330/8332/Modified 8330. Initial calibrations were performed with a standard six to eight-point curve for all target compounds. Curve calibration factors were calculated or linear regression curves were plotted. %RSDs or correlation coefficients were within QC limits. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met. Raw data was verified. No qualifications were required due to unmet initial or continuing calibration criteria.

Initial Calibration Date: 10/8/07, Instrument LC11.1 C-18 column
CF and %RSD Calculations:

Compound Name: RDX in level 4
Lab Value: 89.24

Area of Compound	4462
Conc. of Compound	50
Calculated CF	89.24

Compound Name: RDX
Lab Value: 1.550

CF of STD 1	86.8
CF of STD 2	87.4
CF of STD 3	87.5
CF of STD 4	89.24
CF of STD 5	89.82
CF of STD 6	89.055
CF of STD 7	90.66
CF of STD 8	89.718
% RSD	1.5496

Initial Calibration Date: 1/2/08, Instrument LC9 CN column

CF and %RSD Calculations:

Compound Name: nitroglycerin in level 6
Lab Value: 67.34500

Area of Compound	13469
Conc. of Compound	200
Calculated CF	67.345

Compound Name: nitroglycerin
Lab Value: 3.20

CF of STD 1	
CF of STD 2	64.4
CF of STD 3	62.25
CF of STD 4	67.0
CF of STD 5	
CF of STD 6	67.345
CF of STD 7	67.332
CF of STD 8	67.042
% RSD	3.1995

Continuing Calibration File ID:
CONC. and %D Calculations:

Compound Name: 1,3,5-tnb, 12/24/07, 20:46 std6 on LC11
Lab Value: 194.8

Area of Compound	30578
avg. CF	157
calculated amount	194.764

Lab Value: 3

nominal amount	200
calculated amount	194.8
% D	2.6

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

No contamination was reported in the associated laboratory blanks. The associated field QC blanks did not exhibit target compound contamination that resulted qualification of the data.

SURROGATE RECOVERIES

Surrogate recoveries were acceptable for all samples and spikes.

EPA SAMPLE ID: YSA14-SW02-1207 (LAB ID - keed71aa)
STANDARD ID: ICAL 10/8/07 LC11
COMPOUND: nitrobenzene
CONCENTRATION: 0.050JPG ug/L

	Water (ug/L)	Soil (mg/Kg)
Area of Compound	171	
CF of Compound	67.72763	
Final Volume (ml)	20	
Dilution Factor	1	
GPC Factor	1	
Injection Volume	1	
Weight of Sample	na	
Initial Volume of Sample	1004	NA
Split factor (split volume)	1	
% Solids Factor	na	
	0.0503	

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample exhibited compliant recoveries. The LCS samples provided with this SDG also exhibited acceptable recoveries for all compounds. No qualifications were required.

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: **None** **Duplicate ID:**

Comments: No positive results were reported in the field duplicate pair.

SAMPLE RESULT VERIFICATION

All P flagged results were qualified as estimate l J. No other qualification of the data was required.

Reviewer: Jacqueline Cleveland **Date:** 3508

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS22-SD04-1207 | Lab Sample ID: 680-32714-2

Matrix: Solid | Lab File ID: m00696.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 6.0 (g) | Date Analyzed: 12/15/2007 03:54

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 59.7

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	21	U	21	1.2
79-34-5	1,1,2,2-Tetrachloroethane	21	U	21	2.9
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	21	U	21	1.4
79-00-5	1,1,2-Trichloroethane	21	U	21	2.5
75-34-3	1,1-Dichloroethane	21	U	21	1.0
75-35-4	1,1-Dichloroethene	21	U	21	1.1
120-82-1	1,2,4-Trichlorobenzene	21	U	21	2.1
96-12-8	1,2-Dibromo-3-Chloropropane	21	U UJ,CCH	21	5.8
95-50-1	1,2-Dichlorobenzene	21	U	21	1.3
107-06-2	1,2-Dichloroethane	21	U	21	2.1
78-87-5	1,2-Dichloropropane	21	U	21	2.3
541-73-1	1,3-Dichlorobenzene	21	U	21	1.7
106-46-7	1,4-Dichlorobenzene	21	U	21	1.1
78-93-3	2-Butanone (MEK)	21	U	21	5.6
591-78-6	2-Hexanone	21	U	21	4.3
108-10-1	4-Methyl-2-pentanone (MIBK)	21	U	21	6.0
67-64-1	Acetone	21	U	21	9.1
71-43-2	Benzene	21	U	21	1.6
75-25-2	Bromoform	21	U	21	2.3
74-83-9	Bromomethane	21	U	21	3.3
75-15-0	Carbon disulfide	13	J	21	1.1
56-23-5	Carbon tetrachloride	21	U	21	2.1
108-90-7	Chlorobenzene	21	U	21	1.5
124-48-1	Chlorodibromomethane	21	U	21	1.0
75-00-3	Chloroethane	21	U	21	2.5
67-66-3	Chloroform	21	U	21	1.0
74-87-3	Chloromethane	21	U	21	1.5
156-59-2	cis-1,2-Dichloroethene	21	U	21	1.3
10061-01-5	cis-1,3-Dichloropropene	21	U	21	1.8
110-82-7	Cyclohexane	21	U	21	1.2
75-27-4	Dichlorobromomethane	21	U	21	1.7
75-71-8	Dichlorodifluoromethane	21	U	21	1.8
100-41-4	Ethylbenzene	21	U	21	1.6
106-93-4	Ethylene Dibromide	21	U	21	3.1
98-82-8	Isopropylbenzene	21	U	21	1.0

 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS22-SD04-1207 | Lab Sample ID: 680-32714-2

Matrix: Solid | Lab File ID: m00696.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 6.0 (g) | Date Analyzed: 12/15/2007 03:54

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 59.7

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	21	U	21	4.6
1634-04-4	Methyl tert-butyl ether	21	U	21	4.6
108-87-2	Methylcyclohexane	21	U	21	1.5
75-09-2	Methylene Chloride	21	U	21	2.1
100-42-5	Styrene	21	U	21	1.4
127-18-4	Tetrachloroethene	21	U	21	1.5
108-88-3	Toluene	21	U	21	1.6
156-60-5	trans-1,2-Dichloroethene	21	U	21	2.0
10061-02-6	trans-1,3-Dichloropropene	21	U	21	1.8
79-01-6	Trichloroethene	21	U	21	2.1
75-69-4	Trichlorofluoromethane	21	U	21	3.1
75-01-4	Vinyl chloride	21	U	21	1.2
1330-20-7	Xylenes, Total	21	U	21	4.8

021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD04-1207
Lab Sample ID: 680-32714-2
Matrix: Solid
Lab File ID: m00696.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 6.0 (g)
Date Analyzed: 12/15/2007 03:54
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 59.7
Analy. Batch No.: 93670
Units: ug/Kg
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD05-1207
Lab Sample ID: 680-32714-4
Matrix: Solid
Lab File ID: m00697.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5.6 (g)
Date Analyzed: 12/15/2007 04:17
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 57.9
Analy. Batch No.: 93670
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	21	U	21	1.2
79-34-5	1,1,2,2-Tetrachloroethane	21	U	21	3.0
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	21	U	21	1.4
79-00-5	1,1,2-Trichloroethane	21	U	21	2.5
75-34-3	1,1-Dichloroethane	21	U	21	1.1
75-35-4	1,1-Dichloroethene	21	U	21	1.1
120-82-1	1,2,4-Trichlorobenzene	21	U	21	2.1
96-12-8	1,2-Dibromo-3-Chloropropane	21	U	21	5.9
95-50-1	1,2-Dichlorobenzene	21	U	21	1.4
107-06-2	1,2-Dichloroethane	21	U	21	2.1
78-87-5	1,2-Dichloropropane	21	U	21	2.3
541-73-1	1,3-Dichlorobenzene	21	U	21	1.8
106-46-7	1,4-Dichlorobenzene	21	U	21	1.1
78-93-3	2-Butanone (MEK)	21	U	21	5.7
591-78-6	2-Hexanone	21	U	21	4.5
108-10-1	4-Methyl-2-pentanone (MIBK)	21	U	21	6.2
67-64-1	Acetone	17	J	21	9.3
71-43-2	Benzene	21	U	21	1.7
75-25-2	Bromoform	21	U	21	2.3
74-83-9	Bromomethane	21	U	21	3.4
75-15-0	Carbon disulfide	12	J	21	1.1
56-23-5	Carbon tetrachloride	21	U	21	2.1
108-90-7	Chlorobenzene	21	U	21	1.5
124-48-1	Chlorodibromomethane	21	U	21	1.1
75-00-3	Chloroethane	21	U	21	2.5
67-66-3	Chloroform	21	U	21	1.1
74-87-3	Chloromethane	21	U	21	1.5
156-59-2	cis-1,2-Dichloroethene	21	U	21	1.3
10061-01-5	cis-1,3-Dichloropropene	21	U	21	1.8
110-82-7	Cyclohexane	21	U	21	1.3
75-27-4	Dichlorobromomethane	21	U	21	1.8
75-71-8	Dichlorodifluoromethane	21	U	21	1.9
100-41-4	Ethylbenzene	21	U	21	1.6
106-93-4	Ethylene Dibromide	21	U	21	3.2
98-82-8	Isopropylbenzene	21	U	21	1.1

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS22-SD05-1207 | Lab Sample ID: 680-32714-4

Matrix: Solid | Lab File ID: m00697.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5.6 (g) | Date Analyzed: 12/15/2007 04:17

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 57.9

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	21	U	21	4.7
1634-04-4	Methyl tert-butyl ether	21	U	21	4.7
108-87-2	Methylcyclohexane	21	U	21	1.5
75-09-2	Methylene Chloride	21	U	21	2.1
100-42-5	Styrene	21	U	21	1.4
127-18-4	Tetrachloroethene	21	U	21	1.5
108-88-3	Toluene	21	U	21	1.7
156-60-5	trans-1,2-Dichloroethene	21	U	21	2.1
10061-02-6	trans-1,3-Dichloropropene	21	U	21	1.8
79-01-6	Trichloroethene	21	U	21	2.1
75-69-4	Trichlorofluoromethane	21	U	21	3.2
75-01-4	Vinyl chloride	21	U	21	1.2
1330-20-7	Xylenes, Total	21	U	21	4.9

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD05-1207
Lab Sample ID: 680-32714-4
Matrix: Solid
Lab File ID: m00697.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5.6 (g)
Date Analyzed: 12/15/2007 04:17
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 57.9
Analy. Batch No.: 93670
Units: ug/Kg
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD06-1207
Lab Sample ID: 680-32714-6
Matrix: Solid
Lab File ID: m00698.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5.1 (g)
Date Analyzed: 12/15/2007 04:39
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 71.4
Analy. Batch No.: 93670
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	34	U	34	2.0
79-34-5	1,1,2,2-Tetrachloroethane	34	U	34	4.8
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	34	U	34	2.3
79-00-5	1,1,2-Trichloroethane	34	U	34	4.1
75-34-3	1,1-Dichloroethane	34	U	34	1.7
75-35-4	1,1-Dichloroethene	34	U	34	1.9
120-82-1	1,2,4-Trichlorobenzene	34	U	34	3.4
96-12-8	1,2-Dibromo-3-Chloropropane	34	U	34	9.6
95-50-1	1,2-Dichlorobenzene	34	U	34	2.2
107-06-2	1,2-Dichloroethane	34	U	34	3.4
78-87-5	1,2-Dichloropropane	34	U	34	3.8
541-73-1	1,3-Dichlorobenzene	34	U	34	2.8
106-46-7	1,4-Dichlorobenzene	34	U	34	1.7
78-93-3	2-Butanone (MEK)	34	U	34	9.3
591-78-6	2-Hexanone	34	U	34	7.2
108-10-1	4-Methyl-2-pentanone (MIBK)	34	U	34	9.9
67-64-1	Acetone	34	U	34	15
71-43-2	Benzene	34	U	34	2.7
75-25-2	Bromoform	34	U	34	3.8
74-83-9	Bromomethane	34	U	34	5.5
75-15-0	Carbon disulfide	6.0	J	34	1.7
56-23-5	Carbon tetrachloride	34	U	34	3.4
108-90-7	Chlorobenzene	34	U	34	2.5
124-48-1	Chlorodibromomethane	34	U	34	1.7
75-00-3	Chloroethane	34	U	34	4.1
67-66-3	Chloroform	34	U	34	1.7
74-87-3	Chloromethane	34	U	34	2.4
156-59-2	cis-1,2-Dichloroethene	34	U	34	2.2
10061-01-5	cis-1,3-Dichloropropene	34	U	34	3.0
110-82-7	Cyclohexane	34	U	34	2.1
75-27-4	Dichlorobromomethane	34	U	34	2.8
75-71-8	Dichlorodifluoromethane	34	U	34	3.1
100-41-4	Ethylbenzene	34	U	34	2.6
106-93-4	Ethylene Dibromide	34	U	34	5.1
98-82-8	Isopropylbenzene	34	U	34	1.7

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD06-1207
Lab Sample ID: 680-32714-6
Matrix: Solid
Lab File ID: m00698.d
Analysis Method: OLM04.3/Vol
Date Received: 12/13/2007 09:43
Sample wt/vol: 5.1 (g)
Date Analyzed: 12/15/2007 04:39
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 71.4
Analy. Batch No.: 93670
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	34	U	34	7.5
1634-04-4	Methyl tert-butyl ether	34	U	34	7.5
108-87-2	Methylcyclohexane	34	U	34	2.5
75-09-2	Methylene Chloride	34	U	34	3.4
100-42-5	Styrene	34	U	34	2.3
127-18-4	Tetrachloroethene	34	U	34	2.5
108-88-3	Toluene	34	U	34	2.7
156-60-5	trans-1,2-Dichloroethene	34	U	34	3.3
10061-02-6	trans-1,3-Dichloropropene	34	U	34	3.0
79-01-6	Trichloroethene	34	U	34	3.4
75-69-4	Trichlorofluoromethane	34	U	34	5.1
75-01-4	Vinyl chloride	34	U	34	2.0
1330-20-7	Xylenes, Total	34	U	34	7.9

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS22-SD06-1207 | Lab Sample ID: 680-32714-6

Matrix: Solid | Lab File ID: m00698.d

Analysis Method: OLM04.3/Vol | Date Received: 12/13/2007 09:43

Sample wt/vol: 5.1 (g) | Date Analyzed: 12/15/2007 04:39

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 71.4

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS04-SD02-1207 | Lab Sample ID: 680-32771-2

Matrix: Solid | Lab File ID: m00699.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5.8 (g) | Date Analyzed: 12/15/2007 05:02

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.7

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	26	U	26	1.5
79-34-5	1,1,2,2-Tetrachloroethane	26	U	26	3.6
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	26	U	26	1.7
79-00-5	1,1,2-Trichloroethane	26	U	26	3.1
75-34-3	1,1-Dichloroethane	26	U	26	1.3
75-35-4	1,1-Dichloroethene	26	U	26	1.4
120-82-1	1,2,4-Trichlorobenzene	26	U	26	2.6
96-12-8	1,2-Dibromo-3-Chloropropane	26	U 05/014	26	7.3
95-50-1	1,2-Dichlorobenzene	26	U	26	1.7
107-06-2	1,2-Dichloroethane	26	U	26	2.6
78-87-5	1,2-Dichloropropane	26	U	26	2.9
541-73-1	1,3-Dichlorobenzene	26	U	26	2.2
106-46-7	1,4-Dichlorobenzene	26	U	26	1.3
78-93-3	2-Butanone (MEK)	26	U	26	7.0
591-78-6	2-Hexanone	26	U	26	5.4
108-10-1	4-Methyl-2-pentanone (MIBK)	26	U	26	7.5
67-64-1	Acetone	20	J	26	11
71-43-2	Benzene	26	U	26	2.0
75-25-2	Bromoform	26	U	26	2.9
74-83-9	Bromomethane	26	U	26	4.1
75-15-0	Carbon disulfide	11	J	26	1.3
56-23-5	Carbon tetrachloride	26	U	26	2.6
108-90-7	Chlorobenzene	26	U	26	1.9
124-48-1	Chlorodibromomethane	26	U	26	1.3
75-00-3	Chloroethane	26	U	26	3.1
67-66-3	Chloroform	26	U	26	1.3
74-87-3	Chloromethane	26	U	26	1.8
156-59-2	cis-1,2-Dichloroethene	26	U	26	1.6
10061-01-5	cis-1,3-Dichloropropene	26	U	26	2.3
110-82-7	Cyclohexane	26	U	26	1.6
75-27-4	Dichlorobromomethane	26	U	26	2.2
75-71-8	Dichlorodifluoromethane	26	U	26	2.3
100-41-4	Ethylbenzene	26	U	26	1.9
106-93-4	Ethylene Dibromide	26	U	26	3.9
98-82-8	Isopropylbenzene	26	U	26	1.3

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS04-SD02-1207
Lab Sample ID: 680-32771-2
Matrix: Solid
Lab File ID: m00699.d
Analysis Method: OLM04.3/Vol
Date Received: 12/14/2007 09:20
Sample wt/vol: 5.8 (g)
Date Analyzed: 12/15/2007 05:02
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 66.7
Analy. Batch No.: 93670
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	26	U	26	5.7
1634-04-4	Methyl tert-butyl ether	26	U	26	5.7
108-87-2	Methylcyclohexane	26	U	26	1.9
75-09-2	Methylene Chloride	26	U	26	2.6
100-42-5	Styrene	26	U	26	1.7
127-18-4	Tetrachloroethene	26	U	26	1.9
108-88-3	Toluene	26	U	26	2.0
156-60-5	trans-1,2-Dichloroethene	26	U	26	2.5
10061-02-6	trans-1,3-Dichloropropene	26	U	26	2.3
79-01-6	Trichloroethene	26	U	26	2.6
75-69-4	Trichlorofluoromethane	26	U	26	3.9
75-01-4	Vinyl chloride	26	U	26	1.5
1330-20-7	Xylenes, Total	26	U	26	6.0

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS04-SD02-1207 | Lab Sample ID: 680-32771-2

Matrix: Solid | Lab File ID: m00699.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5.8 (g) | Date Analyzed: 12/15/2007 05:02

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 66.7

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD04-1207 | Lab Sample ID: 680-32771-4

Matrix: Solid | Lab File ID: m00700.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5.9 (g) | Date Analyzed: 12/15/2007 05:24

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 68.4

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	27	U	27	1.6
79-34-5	1,1,2,2-Tetrachloroethane	27	U	27	3.8
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	27	U	27	1.8
79-00-5	1,1,2-Trichloroethane	27	U	27	3.2
75-34-3	1,1-Dichloroethane	27	U	27	1.3
75-35-4	1,1-Dichloroethene	27	U	27	1.4
120-82-1	1,2,4-Trichlorobenzene	27	U	27	2.7
96-12-8	1,2-Dibromo-3-Chloropropane	27	U UJ,CH	27	7.5
95-50-1	1,2-Dichlorobenzene	27	U	27	1.7
107-06-2	1,2-Dichloroethane	27	U	27	2.7
78-87-5	1,2-Dichloropropane	27	U	27	2.9
541-73-1	1,3-Dichlorobenzene	27	U	27	2.2
106-46-7	1,4-Dichlorobenzene	27	U	27	1.4
78-93-3	2-Butanone (MEK)	27	U	27	7.2
591-78-6	2-Hexanone	27	U	27	5.6
108-10-1	4-Methyl-2-pentanone (MIBK)	27	U	27	7.8
67-64-1	Acetone	29		27	12
71-43-2	Benzene	27	U	27	2.1
75-25-2	Bromoform	27	U	27	2.9
74-83-9	Bromomethane	27	U	27	4.3
75-15-0	Carbon disulfide	15	J	27	1.4
56-23-5	Carbon tetrachloride	27	U	27	2.7
108-90-7	Chlorobenzene	27	U	27	2.0
124-48-1	Chlorodibromomethane	27	U	27	1.3
75-00-3	Chloroethane	27	U	27	3.2
67-66-3	Chloroform	27	U	27	1.3
74-87-3	Chloromethane	27	U	27	1.9
156-59-2	cis-1,2-Dichloroethene	27	U	27	1.7
10061-01-5	cis-1,3-Dichloropropene	27	U	27	2.3
110-82-7	Cyclohexane	27	U	27	1.6
75-27-4	Dichlorobromomethane	27	U	27	2.2
75-71-8	Dichlorodifluoromethane	27	U	27	2.4
100-41-4	Ethylbenzene	27	U	27	2.0
106-93-4	Ethylene Dibromide	27	U	27	4.0
98-82-8	Isopropylbenzene	27	U	27	1.3

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD04-1207 | Lab Sample ID: 680-32771-4

Matrix: Solid | Lab File ID: m00700.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5.9 (g) | Date Analyzed: 12/15/2007 05:24

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 68.4

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	27	U	27	5.9
1634-04-4	Methyl tert-butyl ether	27	U	27	5.9
108-87-2	Methylcyclohexane	27	U	27	1.9
75-09-2	Methylene Chloride	27	U	27	2.7
100-42-5	Styrene	27	U	27	1.8
127-18-4	Tetrachloroethene	27	U	27	2.0
108-88-3	Toluene	27	U	27	2.1
156-60-5	trans-1,2-Dichloroethene	27	U	27	2.6
10061-02-6	trans-1,3-Dichloropropene	27	U	27	2.3
79-01-6	Trichloroethene	27	U	27	2.7
75-69-4	Trichlorofluoromethane	27	U	27	4.0
75-01-4	Vinyl chloride	27	U	27	1.6
1330-20-7	Xylenes, Total	27	U	27	6.2

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS08-SD04-1207
Lab Sample ID: 680-32771-4
Matrix: Solid
Lab File ID: m00700.d
Analysis Method: OLM04.3/Vol
Date Received: 12/14/2007 09:20
Sample wt/vol: 5.9 (g)
Date Analyzed: 12/15/2007 05:24
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 68.4
Analy. Batch No.: 93670
Units: ug/Kg
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD03-1207 | Lab Sample ID: 680-32771-6

Matrix: Solid | Lab File ID: m00701.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5.3 (g) | Date Analyzed: 12/15/2007 05:47

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 63.8

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	26	U	26	1.5
79-34-5	1,1,2,2-Tetrachloroethane	26	U	26	3.6
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	26	U	26	1.7
79-00-5	1,1,2-Trichloroethane	26	U	26	3.1
75-34-3	1,1-Dichloroethane	26	U	26	1.3
75-35-4	1,1-Dichloroethene	26	U	26	1.4
120-82-1	1,2,4-Trichlorobenzene	26	U	26	2.6
96-12-8	1,2-Dibromo-3-Chloropropane	26	U	26	7.3
95-50-1	1,2-Dichlorobenzene	26	U	26	1.7
107-06-2	1,2-Dichloroethane	26	U	26	2.6
78-87-5	1,2-Dichloropropane	26	U	26	2.9
541-73-1	1,3-Dichlorobenzene	26	U	26	2.2
106-46-7	1,4-Dichlorobenzene	26	U	26	1.3
78-93-3	2-Butanone (MEK)	26	U	26	7.0
591-78-6	2-Hexanone	26	U	26	5.5
108-10-1	4-Methyl-2-pentanone (MIBK)	26	U	26	7.6
67-64-1	Acetone	26	U	26	11
71-43-2	Benzene	26	U	26	2.1
75-25-2	Bromoform	26	U	26	2.9
74-83-9	Bromomethane	26	U	26	4.2
75-15-0	Carbon disulfide	26	U	26	1.3
56-23-5	Carbon tetrachloride	26	U	26	2.6
108-90-7	Chlorobenzene	26	U	26	1.9
124-48-1	Chlorodibromomethane	26	U	26	1.3
75-00-3	Chloroethane	26	U	26	3.1
67-66-3	Chloroform	26	U	26	1.3
74-87-3	Chloromethane	26	U	26	1.9
156-59-2	cis-1,2-Dichloroethene	26	U	26	1.6
10061-01-5	cis-1,3-Dichloropropene	26	U	26	2.3
110-82-7	Cyclohexane	26	U	26	1.6
75-27-4	Dichlorobromomethane	26	U	26	2.2
75-71-8	Dichlorodifluoromethane	26	U	26	2.3
100-41-4	Ethylbenzene	26	U	26	2.0
106-93-4	Ethylene Dibromide	26	U	26	3.9
98-82-8	Isopropylbenzene	26	U	26	1.3

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS08-SD03-1207
Lab Sample ID: 680-32771-6
Matrix: Solid
Lab File ID: m00701.d
Analysis Method: OLM04.3/Vol
Date Received: 12/14/2007 09:20
Sample wt/vol: 5.3 (g)
Date Analyzed: 12/15/2007 05:47
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 63.8
Analy. Batch No.: 93670
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	26	U	26	5.7
1634-04-4	Methyl tert-butyl ether	26	U	26	5.7
108-87-2	Methylcyclohexane	26	U	26	1.9
75-09-2	Methylene Chloride	26	U	26	2.6
100-42-5	Styrene	26	U	26	1.7
127-18-4	Tetrachloroethene	26	U	26	1.9
108-88-3	Toluene	26	U	26	2.1
156-60-5	trans-1,2-Dichloroethene	26	U	26	2.5
10061-02-6	trans-1,3-Dichloropropene	26	U	26	2.3
79-01-6	Trichloroethene	26	U	26	2.6
75-69-4	Trichlorofluoromethane	26	U	26	3.9
75-01-4	Vinyl chloride	26	U	26	1.5
1330-20-7	Xylenes, Total	26	U	26	6.0

VG21808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS08-SD03-1207
Lab Sample ID: 680-32771-6
Matrix: Solid
Lab File ID: m00701.d
Analysis Method: OLM04.3/Vol
Date Received: 12/14/2007 09:20
Sample wt/vol: 5.3 (g)
Date Analyzed: 12/15/2007 05:47
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 63.8
Analy. Batch No.: 93670
Units: ug/Kg
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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028

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD02-1207 | Lab Sample ID: 680-32771-8

Matrix: Solid | Lab File ID: m00702.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5.2 (g) | Date Analyzed: 12/15/2007 06:10

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.5

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	27	U	27	1.6
79-34-5	1,1,2,2-Tetrachloroethane	27	U	27	3.8
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	27	U	27	1.8
79-00-5	1,1,2-Trichloroethane	27	U	27	3.2
75-34-3	1,1-Dichloroethane	27	U	27	1.4
75-35-4	1,1-Dichloroethene	27	U	27	1.5
120-82-1	1,2,4-Trichlorobenzene	27	U	27	2.7
96-12-8	1,2-Dibromo-3-Chloropropane	27	~~U~~ UJ, CCH	27	7.6
95-50-1	1,2-Dichlorobenzene	27	U	27	1.8
107-06-2	1,2-Dichloroethane	27	U	27	2.7
78-87-5	1,2-Dichloropropane	27	U	27	3.0
541-73-1	1,3-Dichlorobenzene	27	U	27	2.2
106-46-7	1,4-Dichlorobenzene	27	U	27	1.4
78-93-3	2-Butanone (MEK)	27	U	27	7.3
591-78-6	2-Hexanone	27	U	27	5.7
108-10-1	4-Methyl-2-pentanone (MIBK)	27	U	27	7.8
67-64-1	Acetone	27	U	27	12
71-43-2	Benzene	27	U	27	2.1
75-25-2	Bromoform	27	U	27	3.0
74-83-9	Bromomethane	27	U	27	4.3
75-15-0	Carbon disulfide	27	U	27	1.4
56-23-5	Carbon tetrachloride	27	U	27	2.7
108-90-7	Chlorobenzene	27	U	27	2.0
124-48-1	Chlorodibromomethane	27	U	27	1.4
75-00-3	Chloroethane	27	U	27	3.2
67-66-3	Chloroform	27	U	27	1.4
74-87-3	Chloromethane	27	U	27	1.9
156-59-2	cis-1,2-Dichloroethene	27	U	27	1.7
10061-01-5	cis-1,3-Dichloropropene	27	U	27	2.4
110-82-7	Cyclohexane	27	U	27	1.6
75-27-4	Dichlorobromomethane	27	U	27	2.2
75-71-8	Dichlorodifluoromethane	27	U	27	2.4
100-41-4	Ethylbenzene	27	U	27	2.0
106-93-4	Ethylene Dibromide	27	U	27	4.1
98-82-8	Isopropylbenzene	27	U	27	1.4

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD02-1207 | Lab Sample ID: 680-32771-8

Matrix: Solid | Lab File ID: m00702.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5.2 (g) | Date Analyzed: 12/15/2007 06:10

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.5

Analy. Batch No.: 93670 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	27	U	27	6.0
1634-04-4	Methyl tert-butyl ether	27	U	27	6.0
108-87-2	Methylcyclohexane	27	U	27	1.9
75-09-2	Methylene Chloride	27	U	27	2.7
100-42-5	Styrene	27	U	27	1.8
127-18-4	Tetrachloroethene	27	U	27	2.0
108-88-3	Toluene	27	U	27	2.1
156-60-5	trans-1,2-Dichloroethene	27	U	27	2.6
10061-02-6	trans-1,3-Dichloropropene	27	U	27	2.4
79-01-6	Trichloroethene	27	U	27	2.7
75-69-4	Trichlorofluoromethane	27	U	27	4.1
75-01-4	Vinyl chloride	27	U	27	1.6
1330-20-7	Xylenes, Total	27	U	27	6.2

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD02-1207 | Lab Sample ID: 680-32771-8

Matrix: Solid | Lab File ID: m00702.d

Analysis Method: OLM04.3/Vol | Date Received: 12/14/2007 09:20

Sample wt/vol: 5.2 (g) | Date Analyzed: 12/15/2007 06:10

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.5

Analy. Batch No.: 93670 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD05-1207 | Lab Sample ID: 680-32816-2

Matrix: Solid | Lab File ID: m0822.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 00:00

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 63.3

Analy. Batch No.: 94478 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	27	U	27	1.6
79-34-5	1,1,2,2-Tetrachloroethane	27	U	27	3.8
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	27	U	27	1.8
79-00-5	1,1,2-Trichloroethane	27	U	27	3.3
75-34-3	1,1-Dichloroethane	27	U	27	1.4
75-35-4	1,1-Dichloroethene	27	U	27	1.5
120-82-1	1,2,4-Trichlorobenzene	27	U	27	2.7
96-12-8	1,2-Dibromo-3-Chloropropane	27	U	27	7.6
95-50-1	1,2-Dichlorobenzene	27	U	27	1.8
107-06-2	1,2-Dichloroethane	27	U	27	2.7
78-87-5	1,2-Dichloropropane	27	U	27	3.0
541-73-1	1,3-Dichlorobenzene	27	U	27	2.3
106-46-7	1,4-Dichlorobenzene	27	U	27	1.4
78-93-3	2-Butanone (MEK)	27	U	27	7.4
591-78-6	2-Hexanone	27	U	27	5.7
108-10-1	4-Methyl-2-pentanone (MIBK)	27	U	27	7.9
67-64-1	Acetone	21	J	27	12
71-43-2	Benzene	27	U	27	2.2
75-25-2	Bromoform	27	U	27	3.0
74-83-9	Bromomethane	27	U	27	4.4
75-15-0	Carbon disulfide	13	J	27	1.4
56-23-5	Carbon tetrachloride	27	U	27	2.7
108-90-7	Chlorobenzene	27	U	27	2.0
124-48-1	Chlorodibromomethane	27	U	27	1.4
75-00-3	Chloroethane	27	U	27	3.3
67-66-3	Chloroform	27	U	27	1.4
74-87-3	Chloromethane	27	U	27	1.9
156-59-2	cis-1,2-Dichloroethene	27	U	27	1.7
10061-01-5	cis-1,3-Dichloropropene	27	U	27	2.4
110-82-7	Cyclohexane	27	U	27	1.6
75-27-4	Dichlorobromomethane	27	U	27	2.3
75-71-8	Dichlorodifluoromethane	27	U	27	2.4
100-41-4	Ethylbenzene	27	U	27	2.0
106-93-4	Ethylene Dibromide	27	U	27	4.1
98-82-8	Isopropylbenzene	27	U	27	1.4

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD05-1207 | Lab Sample ID: 680-32816-2

Matrix: Solid | Lab File ID: m0822.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 00:00

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 63.3

Analy. Batch No.: 94478 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	27	U	27	6.0
1634-04-4	Methyl tert-butyl ether	27	U	27	6.0
108-87-2	Methylcyclohexane	27	U	27	2.0
75-09-2	Methylene Chloride	27	U	27	2.7
100-42-5	Styrene	27	U	27	1.8
127-18-4	Tetrachloroethene	27	U	27	2.0
108-88-3	Toluene	27	U	27	2.2
156-60-5	trans-1,2-Dichloroethene	27	U	27	2.6
10061-02-6	trans-1,3-Dichloropropene	27	U	27	2.4
79-01-6	Trichloroethene	27	U	27	2.7
75-69-4	Trichlorofluoromethane	27	U	27	4.1
75-01-4	Vinyl chloride	27	U	27	1.6
1330-20-7	Xylenes, Total	27	U	27	6.3

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YSA14-SD05-1207
Lab Sample ID: 680-32816-2
Matrix: Solid
Lab File ID: m0822.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/22/2007 00:00
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 63.3
Analy. Batch No.: 94478
Units: ug/Kg
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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03

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YSA14-SD02-1207
Lab Sample ID: 680-32816-4
Matrix: Solid
Lab File ID: m0855.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/23/2007 21:07
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 47.7
Analy. Batch No.: 95024
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	19	U	19	1.1
79-34-5	1,1,2,2-Tetrachloroethane	19	U	19	2.7
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	19	U	19	1.3
79-00-5	1,1,2-Trichloroethane	19	U	19	2.3
75-34-3	1,1-Dichloroethane	19	U	19	0.96
75-35-4	1,1-Dichloroethene	19	U	19	1.0
120-82-1	1,2,4-Trichlorobenzene	19	U	19	1.9
96-12-8	1,2-Dibromo-3-Chloropropane	19	~~U~~ UJ,CCH	19	5.4
95-50-1	1,2-Dichlorobenzene	19	U	19	1.2
107-06-2	1,2-Dichloroethane	19	U	19	1.9
78-87-5	1,2-Dichloropropane	19	U	19	2.1
541-73-1	1,3-Dichlorobenzene	19	U	19	1.6
106-46-7	1,4-Dichlorobenzene	19	U	19	0.98
78-93-3	2-Butanone (MEK)	19	U	19	5.2
591-78-6	2-Hexanone	19	U	19	4.0
108-10-1	4-Methyl-2-pentanone (MIBK)	19	U	19	5.5
67-64-1	Acetone	19	U	19	8.4
71-43-2	Benzene	19	U	19	1.5
75-25-2	Bromoform	19	U	19	2.1
74-83-9	Bromomethane	19	U	19	3.1
75-15-0	Carbon disulfide	19	U	19	0.98
56-23-5	Carbon tetrachloride	19	U	19	1.9
108-90-7	Chlorobenzene	19	U	19	1.4
124-48-1	Chlorodibromomethane	19	U	19	0.96
75-00-3	Chloroethane	19	U	19	2.3
67-66-3	Chloroform	19	U	19	0.96
74-87-3	Chloromethane	19	U	19	1.4
156-59-2	cis-1,2-Dichloroethene	19	U	19	1.2
10061-01-5	cis-1,3-Dichloropropene	19	U	19	1.7
110-82-7	Cyclohexane	19	U	19	1.1
75-27-4	Dichlorobromomethane	19	U	19	1.6
75-71-8	Dichlorodifluoromethane	19	U	19	1.7
100-41-4	Ethylbenzene	19	U	19	1.4
106-93-4	Ethylene Dibromide	19	U	19	2.9
98-82-8	Isopropylbenzene	19	U	19	0.96

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FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YSA14-SD02-1207
Lab Sample ID: 680-32816-4
Matrix: Solid
Lab File ID: m0855.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/23/2007 21:07
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 47.7
Analy. Batch No.: 95024
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	19	U	19	4.2
1634-04-4	Methyl tert-butyl ether	19	U	19	4.2
108-87-2	Methylcyclohexane	19	U	19	1.4
75-09-2	Methylene Chloride	19	U	19	1.9
100-42-5	Styrene	19	U	19	1.3
127-18-4	Tetrachloroethene	19	U	19	1.4
108-88-3	Toluene	19	U	19	1.5
156-60-5	trans-1,2-Dichloroethene	19	U	19	1.9
10061-02-6	trans-1,3-Dichloropropene	19	U	19	1.7
79-01-6	Trichloroethene	19	U	19	1.9
75-69-4	Trichlorofluoromethane	19	U	19	2.9
75-01-4	Vinyl chloride	19	U	19	1.1
1330-20-7	Xylenes, Total	15	J	19	4.4

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD02-1207 | Lab Sample ID: 680-32816-4

Matrix: Solid | Lab File ID: m0855.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/23/2007 21:07

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 47.7

Analy. Batch No.: 95024 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

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037

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD03-1207 | Lab Sample ID: 680-32816-6

Matrix: Solid | Lab File ID: m0824.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 00:46

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.9

Analy. Batch No.: 94478 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	28	U	28	1.7
79-34-5	1,1,2,2-Tetrachloroethane	28	U	28	4.0
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	28	U	28	1.9
79-00-5	1,1,2-Trichloroethane	28	U	28	3.4
75-34-3	1,1-Dichloroethane	28	U	28	1.4
75-35-4	1,1-Dichloroethene	28	U	28	1.5
120-82-1	1,2,4-Trichlorobenzene	28	U	28	2.8
96-12-8	1,2-Dibromo-3-Chloropropane	28	U	28	8.0
95-50-1	1,2-Dichlorobenzene	28	U	28	1.9
107-06-2	1,2-Dichloroethane	28	U	28	2.8
78-87-5	1,2-Dichloropropane	28	U	28	3.1
541-73-1	1,3-Dichlorobenzene	28	U	28	2.4
106-46-7	1,4-Dichlorobenzene	28	U	28	1.5
78-93-3	2-Butanone (MEK)	28	U	28	7.7
591-78-6	2-Hexanone	28	U	28	6.0
108-10-1	4-Methyl-2-pentanone (MIBK)	28	U	28	8.3
67-64-1	Acetone	28	U	28	13
71-43-2	Benzene	28	U	28	2.2
75-25-2	Bromoform	28	U	28	3.1
74-83-9	Bromomethane	28	U	28	4.6
75-15-0	Carbon disulfide	28	U	28	1.5
56-23-5	Carbon tetrachloride	28	U	28	2.8
108-90-7	Chlorobenzene	28	U	28	2.1
124-48-1	Chlorodibromomethane	28	U	28	1.4
75-00-3	Chloroethane	28	U	28	3.4
67-66-3	Chloroform	28	U	28	1.4
74-87-3	Chloromethane	28	U	28	2.0
156-59-2	cis-1,2-Dichloroethene	28	U	28	1.8
10061-01-5	cis-1,3-Dichloropropene	28	U	28	2.5
110-82-7	Cyclohexane	28	U	28	1.7
75-27-4	Dichlorobromomethane	28	U	28	2.4
75-71-8	Dichlorodifluoromethane	28	U	28	2.5
100-41-4	Ethylbenzene	28	U	28	2.1
106-93-4	Ethylene Dibromide	28	U	28	4.3
98-82-8	Isopropylbenzene	28	U	28	1.4

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD03-1207 | Lab Sample ID: 680-32816-6

Matrix: Solid | Lab File ID: m0824.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 00:46

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.9

Analy. Batch No.: 94478 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	28	U	28	6.3
1634-04-4	Methyl tert-butyl ether	28	U	28	6.3
108-87-2	Methylcyclohexane	28	U	28	2.0
75-09-2	Methylene Chloride	28	U	28	2.8
100-42-5	Styrene	28	U	28	1.9
127-18-4	Tetrachloroethene	28	U	28	2.1
108-88-3	Toluene	28	U	28	2.2
156-60-5	trans-1,2-Dichloroethene	28	U	28	2.8
10061-02-6	trans-1,3-Dichloropropene	28	U	28	2.5
79-01-6	Trichloroethene	28	U	28	2.8
75-69-4	Trichlorofluoromethane	28	U	28	4.3
75-01-4	Vinyl chloride	28	U	28	1.7
1330-20-7	Xylenes, Total	28	U	28	6.5

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YSA14-SD03-1207
Lab Sample ID: 680-32816-6
Matrix: Solid
Lab File ID: m0824.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/22/2007 00:46
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 64.9
Analy. Batch No.: 94478
Units: ug/Kg
Number TICs Found: 0
TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD02-1207 | Lab Sample ID: 680-32816-8

Matrix: Solid | Lab File ID: m0825.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 01:08

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 63.5

Analy. Batch No.: 94478 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	27	U	27	1.6
79-34-5	1,1,2,2-Tetrachloroethane	27	U	27	3.8
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	27	U	27	1.8
79-00-5	1,1,2-Trichloroethane	27	U	27	3.3
75-34-3	1,1-Dichloroethane	27	U	27	1.4
75-35-4	1,1-Dichloroethene	27	U	27	1.5
120-82-1	1,2,4-Trichlorobenzene	27	U	27	2.7
96-12-8	1,2-Dibromo-3-Chloropropane	27	U	27	7.7
95-50-1	1,2-Dichlorobenzene	27	U	27	1.8
107-06-2	1,2-Dichloroethane	27	U	27	2.7
78-87-5	1,2-Dichloropropane	27	U	27	3.0
541-73-1	1,3-Dichlorobenzene	27	U	27	2.3
106-46-7	1,4-Dichlorobenzene	27	U	27	1.4
78-93-3	2-Butanone (MEK)	27	U	27	7.4
591-78-6	2-Hexanone	27	U	27	5.7
108-10-1	4-Methyl-2-pentanone (MIBK)	27	U	27	7.9
67-64-1	Acetone	27	U	27	12
71-43-2	Benzene	27	U	27	2.2
75-25-2	Bromoform	27	U	27	3.0
74-83-9	Bromomethane	27	U	27	4.4
75-15-0	Carbon disulfide	27	U	27	1.4
56-23-5	Carbon tetrachloride	27	U	27	2.7
108-90-7	Chlorobenzene	27	U	27	2.0
124-48-1	Chlorodibromomethane	27	U	27	1.4
75-00-3	Chloroethane	27	U	27	3.3
67-66-3	Chloroform	27	U	27	1.4
74-87-3	Chloromethane	27	U	27	1.9
156-59-2	cis-1,2-Dichloroethene	27	U	27	1.7
10061-01-5	cis-1,3-Dichloropropene	27	U	27	2.4
110-82-7	Cyclohexane	27	U	27	1.6
75-27-4	Dichlorobromomethane	27	U	27	2.3
75-71-8	Dichlorodifluoromethane	27	U	27	2.4
100-41-4	Ethylbenzene	27	U	27	2.1
106-93-4	Ethylene Dibromide	27	U	27	4.1
98-82-8	Isopropylbenzene	27	U	27	1.4

LM 021808

041

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YBKG-SD02-1207
Lab Sample ID: 680-32816-8
Matrix: Solid
Lab File ID: m0825.d
Analysis Method: OLM04.3/Vol
Date Received: 12/15/2007 10:11
Sample wt/vol: 5 (mL)
Date Analyzed: 12/22/2007 01:08
Level: (low/med) Low
Dilution Factor: 1
GC Column/ID: DB-624 0.18 (mm)
Soil Aliquot Vol:
Soil Extract Vol.:
% Moisture: 63.5
Analy. Batch No.: 94478
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	27	U	27	6.0
1634-04-4	Methyl tert-butyl ether	27	U	27	6.0
108-87-2	Methylcyclohexane	27	U	27	2.0
75-09-2	Methylene Chloride	27	U	27	2.7
100-42-5	Styrene	27	U	27	1.8
127-18-4	Tetrachloroethene	27	U	27	2.0
108-88-3	Toluene	27	U	27	2.2
156-60-5	trans-1,2-Dichloroethene	27	U	27	2.7
10061-02-6	trans-1,3-Dichloropropene	27	U	27	2.4
79-01-6	Trichloroethene	27	U	27	2.7
75-69-4	Trichlorofluoromethane	27	U	27	4.1
75-01-4	Vinyl chloride	27	U	27	1.6
1330-20-7	Xylenes, Total	27	U	27	6.3

VM 021808

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD02-1207 | Lab Sample ID: 680-32816-8

Matrix: Solid | Lab File ID: m0825.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 01:08

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 63.5

Analy. Batch No.: 94478 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD03-1207 | Lab Sample ID: 680-32816-13

Matrix: Solid | Lab File ID: m0826.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 01:31

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 65.0

Analy. Batch No.: 94478 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	29	U	29	1.7
79-34-5	1,1,2,2-Tetrachloroethane	29	U	29	4.0
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	29	U	29	1.9
79-00-5	1,1,2-Trichloroethane	29	U	29	3.4
75-34-3	1,1-Dichloroethane	29	U	29	1.4
75-35-4	1,1-Dichloroethene	29	U	29	1.5
120-82-1	1,2,4-Trichlorobenzene	29	U	29	2.9
96-12-8	1,2-Dibromo-3-Chloropropane	29	U	29	8.0
95-50-1	1,2-Dichlorobenzene	29	U	29	1.9
107-06-2	1,2-Dichloroethane	29	U	29	2.9
78-87-5	1,2-Dichloropropane	29	U	29	3.1
541-73-1	1,3-Dichlorobenzene	29	U	29	2.4
106-46-7	1,4-Dichlorobenzene	29	U	29	1.5
78-93-3	2-Butanone (MEK)	29	U	29	7.7
591-78-6	2-Hexanone	29	U	29	6.0
108-10-1	4-Methyl-2-pentanone (MIBK)	29	U	29	8.3
67-64-1	Acetone	29	U	29	13
71-43-2	Benzene	29	U	29	2.3
75-25-2	Bromoform	29	U	29	3.1
74-83-9	Bromomethane	29	U	29	4.6
75-15-0	Carbon disulfide	29	U	29	1.5
56-23-5	Carbon tetrachloride	29	U	29	2.9
108-90-7	Chlorobenzene	29	U	29	2.1
124-48-1	Chlorodibromomethane	29	U	29	1.4
75-00-3	Chloroethane	29	U	29	3.4
67-66-3	Chloroform	29	U	29	1.4
74-87-3	Chloromethane	29	U	29	2.0
156-59-2	cis-1,2-Dichloroethene	29	U	29	1.8
10061-01-5	cis-1,3-Dichloropropene	29	U	29	2.5
110-82-7	Cyclohexane	29	U	29	1.7
75-27-4	Dichlorobromomethane	29	U	29	2.4
75-71-8	Dichlorodifluoromethane	29	U	29	2.5
100-41-4	Ethylbenzene	29	U	29	2.1
106-93-4	Ethylene Dibromide	29	U	29	4.3
98-82-8	Isopropylbenzene	29	U	29	1.4

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044

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD03-1207 | Lab Sample ID: 680-32816-13

Matrix: Solid | Lab File ID: m0826.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 01:31

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 65.0

Analy. Batch No.: 94478 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	29	U	29	6.3
1634-04-4	Methyl tert-butyl ether	29	U	29	6.3
108-87-2	Methylcyclohexane	29	U	29	2.1
75-09-2	Methylene Chloride	29	U	29	2.9
100-42-5	Styrene	29	U	29	1.9
127-18-4	Tetrachloroethene	29	U	29	2.1
108-88-3	Toluene	29	U	29	2.3
156-60-5	trans-1,2-Dichloroethene	29	U	29	2.8
10061-02-6	trans-1,3-Dichloropropene	29	U	29	2.5
79-01-6	Trichloroethene	29	U	29	2.9
75-69-4	Trichlorofluoromethane	29	U	29	4.3
75-01-4	Vinyl chloride	29	U	29	1.7
1330-20-7	Xylenes, Total	29	U	29	6.6

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD03-1207 | Lab Sample ID: 680-32816-13

Matrix: Solid | Lab File ID: m0826.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 01:31

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 65.0

Analy. Batch No.: 94478 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

046

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD06-1207 | Lab Sample ID: 680-32816-15

Matrix: Solid | Lab File ID: m0827.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 01:53

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.1

Analy. Batch No.: 94478 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	28	U	28	1.6
79-34-5	1,1,2,2-Tetrachloroethane	28	U	28	3.9
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroetha ne	28	U	28	1.8
79-00-5	1,1,2-Trichloroethane	28	U	28	3.3
75-34-3	1,1-Dichloroethane	28	U	28	1.4
75-35-4	1,1-Dichloroethene	28	U	28	1.5
120-82-1	1,2,4-Trichlorobenzene	28	U	28	2.8
96-12-8	1,2-Dibromo-3-Chloropropane	28	U	28	7.8
95-50-1	1,2-Dichlorobenzene	28	U	28	1.8
107-06-2	1,2-Dichloroethane	28	U	28	2.8
78-87-5	1,2-Dichloropropane	28	U	28	3.1
541-73-1	1,3-Dichlorobenzene	28	U	28	2.3
106-46-7	1,4-Dichlorobenzene	28	U	28	1.4
78-93-3	2-Butanone (MEK)	28	U	28	7.5
591-78-6	2-Hexanone	28	U	28	5.8
108-10-1	4-Methyl-2-pentanone (MIBK)	28	U	28	8.1
67-64-1	Acetone	39		28	12
71-43-2	Benzene	28	U	28	2.2
75-25-2	Bromoform	28	U	28	3.1
74-83-9	Bromomethane	28	U	28	4.5
75-15-0	Carbon disulfide	13	J	28	1.4
56-23-5	Carbon tetrachloride	28	U	28	2.8
108-90-7	Chlorobenzene	28	U	28	2.0
124-48-1	Chlorodibromomethane	28	U	28	1.4
75-00-3	Chloroethane	28	U	28	3.3
67-66-3	Chloroform	28	U	28	1.4
74-87-3	Chloromethane	28	U	28	2.0
156-59-2	cis-1,2-Dichloroethene	28	U	28	1.8
10061-01-5	cis-1,3-Dichloropropene	28	U	28	2.4
110-82-7	Cyclohexane	28	U	28	1.7
75-27-4	Dichlorobromomethane	28	U	28	2.3
75-71-8	Dichlorodifluoromethane	28	U	28	2.5
100-41-4	Ethylbenzene	28	U	28	2.1
106-93-4	Ethylene Dibromide	28	U	28	4.2
98-82-8	Isopropylbenzene	28	U	28	1.4

LM 02/18/08

047

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD06-1207 | Lab Sample ID: 680-32816-15

Matrix: Solid | Lab File ID: m0827.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 01:53

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.1

Analy. Batch No.: 94478 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	MDL
79-20-9	Methyl acetate	28	U	28	6.1
1634-04-4	Methyl tert-butyl ether	28	U	28	6.1
108-87-2	Methylcyclohexane	28	U	28	2.0
75-09-2	Methylene Chloride	28	U	28	2.8
100-42-5	Styrene	28	U	28	1.8
127-18-4	Tetrachloroethene	28	U	28	2.0
108-88-3	Toluene	28	U	28	2.2
156-60-5	trans-1,2-Dichloroethene	28	U	28	2.7
10061-02-6	trans-1,3-Dichloropropene	28	U	28	2.4
79-01-6	Trichloroethene	28	U	28	2.8
75-69-4	Trichlorofluoromethane	28	U	28	4.2
75-01-4	Vinyl chloride	28	U	28	1.6
1330-20-7	Xylenes, Total	28	U	28	6.4

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD06-1207 | Lab Sample ID: 680-32816-15

Matrix: Solid | Lab File ID: m0827.d

Analysis Method: OLM04.3/Vol | Date Received: 12/15/2007 10:11

Sample wt/vol: 5 (mL) | Date Analyzed: 12/22/2007 01:53

Level: (low/med) Low | Dilution Factor: 1

GC Column/ID: DB-624 0.18 (mm) | Soil Aliquot Vol:

Soil Extract Vol.: | % Moisture: 64.1

Analy. Batch No.: 94478 | Units: ug/Kg

Number TICs Found: 0 | TIC Total: 0

CAS No.	Compound Name	RT	Result	Q
	Tentatively Identified Compound		None	

VM 02/18/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD04-1207
Lab Sample ID: 680-32714-2
Matrix: Solid
Lab File ID: e7794.d
Analysis Method: OLM04.3/SV
Date Received: 12/13/2007 09:43
Sample wt/vol: 30.48 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 16:14
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 59.7
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1600	U	1600	1600
108-60-1	2,2'-oxybis[1-chloropropane]	1600	U	1600	1600
95-95-4	2,4,5-Trichlorophenol	1600	U	1600	1600
88-06-2	2,4,6-Trichlorophenol	1600	U	1600	1600
120-83-2	2,4-Dichlorophenol	1600	U	1600	1600
105-67-9	2,4-Dimethylphenol	1600	U	1600	1600
51-28-5	2,4-Dinitrophenol	8300	U	8300	8300
121-14-2	2,4-Dinitrotoluene	1600	U	1600	1600
606-20-2	2,6-Dinitrotoluene	1600	U	1600	1600
91-58-7	2-Chloronaphthalene	1600	U	1600	1600
95-57-8	2-Chlorophenol	1600	U	1600	1600
91-57-6	2-Methylnaphthalene	1600	U	1600	1600
95-48-7	2-Methylphenol	1600	U	1600	1600
88-74-4	2-Nitroaniline	8300	U	8300	8300
88-75-5	2-Nitrophenol	1600	U	1600	1600
91-94-1	3,3'-Dichlorobenzidine	1600	U	1600	1600
99-09-2	3-Nitroaniline	8300	U	8300	8300
534-52-1	4,6-Dinitro-2-methylphenol	8300	U	8300	8300
101-55-3	4-Bromophenyl phenyl ether	1600	U	1600	1600
59-50-7	4-Chloro-3-methylphenol	1600	U	1600	1600
106-47-8	4-Chloroaniline	3200	U	3200	3200
7005-72-3	4-Chlorophenyl phenyl ether	1600	U	1600	1600
106-44-5	4-Methylphenol	1600	U	1600	1600
100-01-6	4-Nitroaniline	8300	U	8300	8300
100-02-7	4-Nitrophenol	8300	U	8300	8300
83-32-9	Acenaphthene	1600	U	1600	1600
208-96-8	Acenaphthylene	1600	U	1600	1600
98-86-2	Acetophenone	1600	U	1600	1600
120-12-7	Anthracene	1600	U	1600	1600
1912-24-9	Atrazine	1600	U	1600	1600
100-52-7	Benzaldehyde	1600	U	1600	1600
56-55-3	Benzo[a]anthracene	1600	U	1600	1600
50-32-8	Benzo[a]pyrene	1600	U	1600	1600
205-99-2	Benzo[b]fluoranthene	1600	U	1600	1600
191-24-2	Benzo[g,h,i]perylene	1600	U	1600	1600

050

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS22-SD04-1207 | Lab Sample ID: 680-32714-2

Matrix: Solid | Lab File ID: e7794.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 30.48 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 16:14

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 59.7

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1600	U	1600	1600
111-91-1	Bis(2-chloroethoxy)methane	1600	U	1600	1600
111-44-4	Bis(2-chloroethyl)ether	1600	U	1600	1600
117-81-7	Bis(2-ethylhexyl) phthalate	1600	U	1600	1600
85-68-7	Butyl benzyl phthalate	1600	U	1600	1600
105-60-2	Caprolactam	1600	U	1600	1600
86-74-8	Carbazole	1600	U	1600	1600
218-01-9	Chrysene	1600	U	1600	1600
84-74-2	Di-n-butyl phthalate	1600	U	1600	1600
117-84-0	Di-n-octyl phthalate	1600	U	1600	1600
53-70-3	Dibenz(a,h)anthracene	1600	U	1600	1600
132-64-9	Dibenzofuran	1600	U	1600	1600
84-66-2	Diethyl phthalate	1600	U	1600	1600
131-11-3	Dimethyl phthalate	1600	U	1600	1600
206-44-0	Fluoranthene	1600	U	1600	1600
86-73-7	Fluorene	1600	U	1600	1600
118-74-1	Hexachlorobenzene	1600	U	1600	1600
87-68-3	Hexachlorobutadiene	1600	U	1600	1600
77-47-4	Hexachlorocyclopentadiene	1600	U	1600	1600
67-72-1	Hexachloroethane	1600	U	1600	1600
193-39-5	Indeno[1,2,3-cd]pyrene	1600	U	1600	1600
78-59-1	Isophorone	1600	U	1600	1600
621-64-7	N-Nitrosodi-n-propylamine	1600	U	1600	1600
86-30-6	N-Nitrosodiphenylamine	1600	U	1600	1600
91-20-3	Naphthalene	1600	U	1600	1600
98-95-3	Nitrobenzene	1600	U	1600	1600
87-86-5	Pentachlorophenol	8300	U	8300	8300
85-01-8	Phenanthrene	1600	U	1600	1600
108-95-2	Phenol	1600	U	1600	1600
129-00-0	Pyrene	1600	U	1600	1600

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD04-1207
Lab Sample ID: 680-32714-2
Matrix: Solid
Lab File ID: e7794.d
Analysis Method: OLM04.3/SV
Date Received: 12/13/2007 09:43
Sample wt/vol: 30.48 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 16:14
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 59.7
Analy. Batch No.: 95787
Units: ug/Kg
Number TICs Found: 7
TIC Total: 11200

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~3000~~	A ~~B,Pr~~
293-96-9	Cyclodecane	7.17	240	N
	Unknown Organic Acid	9.69	~~570~~	~~B,Pr~~
	Unknown Organic Acid	10.27	350	
791-28-6	Phosphine oxide, triphenyl-	10.89	~~3300~~	N ~~B,Pr~~
	Unknown	16.16	840	
	Unknown	16.31	2900	

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GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS22-SD05-1207 | Lab Sample ID: 680-32714-4

Matrix: Solid | Lab File ID: e7795.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 30.14 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 16:38

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 57.9

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1600	U	1600	1600
108-60-1	2,2'-oxybis[1-chloropropane]	1600	U	1600	1600
95-95-4	2,4,5-Trichlorophenol	1600	U	1600	1600
88-06-2	2,4,6-Trichlorophenol	1600	U	1600	1600
120-83-2	2,4-Dichlorophenol	1600	U	1600	1600
105-67-9	2,4-Dimethylphenol	1600	U	1600	1600
51-28-5	2,4-Dinitrophenol	8000	U	8000	8000
121-14-2	2,4-Dinitrotoluene	1600	U	1600	1600
606-20-2	2,6-Dinitrotoluene	1600	U	1600	1600
91-58-7	2-Chloronaphthalene	1600	U	1600	1600
95-57-8	2-Chlorophenol	1600	U	1600	1600
91-57-6	2-Methylnaphthalene	1600	U	1600	1600
95-48-7	2-Methylphenol	1600	U	1600	1600
88-74-4	2-Nitroaniline	8000	U	8000	8000
88-75-5	2-Nitrophenol	1600	U	1600	1600
91-94-1	3,3'-Dichlorobenzidine	1600	U	1600	1600
99-09-2	3-Nitroaniline	8000	U	8000	8000
534-52-1	4,6-Dinitro-2-methylphenol	8000	U	8000	8000
101-55-3	4-Bromophenyl phenyl ether	1600	U	1600	1600
59-50-7	4-Chloro-3-methylphenol	1600	U	1600	1600
106-47-8	4-Chloroaniline	3100	U	3100	3100
7005-72-3	4-Chlorophenyl phenyl ether	1600	U	1600	1600
106-44-5	4-Methylphenol	1600	U	1600	1600
100-01-6	4-Nitroaniline	8000	U	8000	8000
100-02-7	4-Nitrophenol	8000	U	8000	8000
83-32-9	Acenaphthene	1600	U	1600	1600
208-96-8	Acenaphthylene	1600	U	1600	1600
98-86-2	Acetophenone	1600	U	1600	1600
120-12-7	Anthracene	1600	U	1600	1600
1912-24-9	Atrazine	1600	U	1600	1600
100-52-7	Benzaldehyde	1600	U	1600	1600
56-55-3	Benzo[a]anthracene	1600	U	1600	1600
50-32-8	Benzo[a]pyrene	1600	U	1600	1600
205-99-2	Benzo[b]fluoranthene	1600	U	1600	1600
191-24-2	Benzo[g,h,i]perylene	1600	U	1600	1600

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS22-SD05-1207 | Lab Sample ID: 680-32714-4

Matrix: Solid | Lab File ID: e7795.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 30.14 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 16:38

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 57.9

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1600	U	1600	1600
111-91-1	Bis(2-chloroethoxy)methane	1600	U	1600	1600
111-44-4	Bis(2-chloroethyl)ether	1600	U	1600	1600
117-81-7	Bis(2-ethylhexyl) phthalate	1600	U	1600	1600
85-68-7	Butyl benzyl phthalate	1600	U	1600	1600
105-60-2	Caprolactam	1600	U	1600	1600
86-74-8	Carbazole	1600	U	1600	1600
218-01-9	Chrysene	1600	U	1600	1600
84-74-2	Di-n-butyl phthalate	1600	U	1600	1600
117-84-0	Di-n-octyl phthalate	1600	U	1600	1600
53-70-3	Dibenz(a,h)anthracene	1600	U	1600	1600
132-64-9	Dibenzofuran	1600	U	1600	1600
84-66-2	Diethyl phthalate	1600	U	1600	1600
131-11-3	Dimethyl phthalate	1600	U	1600	1600
206-44-0	Fluoranthene	1600	U	1600	1600
86-73-7	Fluorene	1600	U	1600	1600
118-74-1	Hexachlorobenzene	1600	U	1600	1600
87-68-3	Hexachlorobutadiene	1600	U	1600	1600
77-47-4	Hexachlorocyclopentadiene	1600	U	1600	1600
67-72-1	Hexachloroethane	1600	U	1600	1600
193-39-5	Indeno[1,2,3-cd]pyrene	1600	U	1600	1600
78-59-1	Isophorone	1600	U	1600	1600
621-64-7	N-Nitrosodi-n-propylamine	1600	U	1600	1600
86-30-6	N-Nitrosodiphenylamine	1600	U	1600	1600
91-20-3	Naphthalene	1600	U	1600	1600
98-95-3	Nitrobenzene	1600	U	1600	1600
87-86-5	Pentachlorophenol	8000	U	8000	8000
85-01-8	Phenanthrene	1600	U	1600	1600
108-95-2	Phenol	1600	U	1600	1600
129-00-0	Pyrene	1600	U	1600	1600

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD05-1207
Lab Sample ID: 680-32714-4
Matrix: Solid
Lab File ID: e7795.d
Analysis Method: OLM04.3/SV
Date Received: 12/13/2007 09:43
Sample wt/vol: 30.14 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 16:38
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 57.9
Analy. Batch No.: 95787
Units: ug/Kg
Number TICs Found: 10
TIC Total: 9930

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~2400~~	A B, BL
872-05-9	1-Decene	7.17	200	N
	Unknown Organic Acid	9.70	~~650~~	B, BL
123-95-5	Octadecanoic acid, butyl ester	10.27	390	N
630-01-3	Hexacosane	10.30	180	N
629-78-7	Heptadecane	10.58	180	N
5717-37-3	(Carbethoxyethylidine)triphenylphosphora	10.89	2700	N
112-95-8	Eicosane	13.08	170	N
	Unknown	16.16	760	
	Unknown	16.31	2300	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD06-1207
Lab Sample ID: 680-32714-6
Matrix: Solid
Lab File ID: e7796.d
Analysis Method: OLM04.3/SV
Date Received: 12/13/2007 09:43
Sample wt/vol: 30.36 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 17:03
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 71.4
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	2300	U	2300	2300
108-60-1	2,2'-oxybis[1-chloropropane]	2300	U	2300	2300
95-95-4	2,4,5-Trichlorophenol	2300	U	2300	2300
88-06-2	2,4,6-Trichlorophenol	2300	U	2300	2300
120-83-2	2,4-Dichlorophenol	2300	U	2300	2300
105-67-9	2,4-Dimethylphenol	2300	U	2300	2300
51-28-5	2,4-Dinitrophenol	12000	U	12000	12000
121-14-2	2,4-Dinitrotoluene	2300	U	2300	2300
606-20-2	2,6-Dinitrotoluene	2300	U	2300	2300
91-58-7	2-Chloronaphthalene	2300	U	2300	2300
95-57-8	2-Chlorophenol	2300	U	2300	2300
91-57-6	2-Methylnaphthalene	2300	U	2300	2300
95-48-7	2-Methylphenol	2300	U	2300	2300
88-74-4	2-Nitroaniline	12000	U	12000	12000
88-75-5	2-Nitrophenol	2300	U	2300	2300
91-94-1	3,3'-Dichlorobenzidine	2300	U	2300	2300
99-09-2	3-Nitroaniline	12000	U	12000	12000
534-52-1	4,6-Dinitro-2-methylphenol	12000	U	12000	12000
101-55-3	4-Bromophenyl phenyl ether	2300	U	2300	2300
59-50-7	4-Chloro-3-methylphenol	2300	U	2300	2300
106-47-8	4-Chloroaniline	4600	U	4600	4600
7005-72-3	4-Chlorophenyl phenyl ether	2300	U	2300	2300
106-44-5	4-Methylphenol	2300	U	2300	2300
100-01-6	4-Nitroaniline	12000	U	12000	12000
100-02-7	4-Nitrophenol	12000	U	12000	12000
83-32-9	Acenaphthene	2300	U	2300	2300
208-96-8	Acenaphthylene	2300	U	2300	2300
98-86-2	Acetophenone	2300	U	2300	2300
120-12-7	Anthracene	2300	U	2300	2300
1912-24-9	Atrazine	2300	U	2300	2300
100-52-7	Benzaldehyde	2300	U	2300	2300
56-55-3	Benzo[a]anthracene	2300	U	2300	2300
50-32-8	Benzo[a]pyrene	2300	U	2300	2300
205-99-2	Benzo[b]fluoranthene	2300	U	2300	2300
191-24-2	Benzo[g,h,i]perylene	2300	U	2300	2300

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GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS22-SD06-1207
Lab Sample ID: 680-32714-6
Matrix: Solid
Lab File ID: e7796.d
Analysis Method: OLM04.3/SV
Date Received: 12/13/2007 09:43
Sample wt/vol: 30.36 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 17:03
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 71.4
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	2300	U	2300	2300
111-91-1	Bis(2-chloroethoxy)methane	2300	U	2300	2300
111-44-4	Bis(2-chloroethyl)ether	2300	U	2300	2300
117-81-7	Bis(2-ethylhexyl) phthalate	2300	U	2300	2300
85-68-7	Butyl benzyl phthalate	2300	U	2300	2300
105-60-2	Caprolactam	2300	U	2300	2300
86-74-8	Carbazole	2300	U	2300	2300
218-01-9	Chrysene	2300	U	2300	2300
84-74-2	Di-n-butyl phthalate	2300	U	2300	2300
117-84-0	Di-n-octyl phthalate	2300	U	2300	2300
53-70-3	Dibenz(a,h)anthracene	2300	U	2300	2300
132-64-9	Dibenzofuran	2300	U	2300	2300
84-66-2	Diethyl phthalate	2300	U	2300	2300
131-11-3	Dimethyl phthalate	2300	U	2300	2300
206-44-0	Fluoranthene	2300	U	2300	2300
86-73-7	Fluorene	2300	U	2300	2300
118-74-1	Hexachlorobenzene	2300	U	2300	2300
87-68-3	Hexachlorobutadiene	2300	U	2300	2300
77-47-4	Hexachlorocyclopentadiene	2300	U	2300	2300
67-72-1	Hexachloroethane	2300	U	2300	2300
193-39-5	Indeno[1,2,3-cd]pyrene	2300	U	2300	2300
78-59-1	Isophorone	2300	U	2300	2300
621-64-7	N-Nitrosodi-n-propylamine	2300	U	2300	2300
86-30-6	N-Nitrosodiphenylamine	2300	U	2300	2300
91-20-3	Naphthalene	2300	U	2300	2300
98-95-3	Nitrobenzene	2300	U	2300	2300
87-86-5	Pentachlorophenol	12000	U	12000	12000
85-01-8	Phenanthrene	2300	U	2300	2300
108-95-2	Phenol	2300	U	2300	2300
129-00-0	Pyrene	2300	U	2300	2300

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS22-SD06-1207 | Lab Sample ID: 680-32714-6

Matrix: Solid | Lab File ID: e7796.d

Analysis Method: OLM04.3/SV | Date Received: 12/13/2007 09:43

Sample wt/vol: 30.36 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 17:03

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 71.4

Analy. Batch No.: 95787 | Units: ug/Kg

Number TICs Found: 12 | TIC Total: 19060

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~3500~~	A B,BL
293-96-9	Cyclodecane	7.17	350	N
	Unknown Organic Acid	9.70	~~3200~~	B,BL
123-95-5	Octadecanoic acid, butyl ester	10.27	1800	N
646-31-1	Tetracosane	10.31	310	N
7225-64-1	Heptadecane, 9-octyl-	10.57	280	N
	Unknown	10.89	3800	
593-49-7	Heptacosane	11.14	350	N
13475-76-8	Docosane, 11-butyl-	11.45	230	N
629-78-7	Heptadecane	13.08	240	N
	Unknown	16.16	1200	
	Unknown	16.30	3800	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS04-SD02-1207 | Lab Sample ID: 680-32771-2

Matrix: Solid | Lab File ID: e7797.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 30.07 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 17:28

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 66.7

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	2000	U	2000	2000
108-60-1	2,2'-oxybis[1-chloropropane]	2000	U	2000	2000
95-95-4	2,4,5-Trichlorophenol	2000	U	2000	2000
88-06-2	2,4,6-Trichlorophenol	2000	U	2000	2000
120-83-2	2,4-Dichlorophenol	2000	U	2000	2000
105-67-9	2,4-Dimethylphenol	2000	U	2000	2000
51-28-5	2,4-Dinitrophenol	10000	U	10000	10000
121-14-2	2,4-Dinitrotoluene	2000	U	2000	2000
606-20-2	2,6-Dinitrotoluene	2000	U	2000	2000
91-58-7	2-Chloronaphthalene	2000	U	2000	2000
95-57-8	2-Chlorophenol	2000	U	2000	2000
91-57-6	2-Methylnaphthalene	2000	U	2000	2000
95-48-7	2-Methylphenol	2000	U	2000	2000
88-74-4	2-Nitroaniline	10000	U	10000	10000
88-75-5	2-Nitrophenol	2000	U	2000	2000
91-94-1	3,3'-Dichlorobenzidine	2000	U	2000	2000
99-09-2	3-Nitroaniline	10000	U	10000	10000
534-52-1	4,6-Dinitro-2-methylphenol	10000	U	10000	10000
101-55-3	4-Bromophenyl phenyl ether	2000	U	2000	2000
59-50-7	4-Chloro-3-methylphenol	2000	U	2000	2000
106-47-8	4-Chloroaniline	4000	U	4000	4000
7005-72-3	4-Chlorophenyl phenyl ether	2000	U	2000	2000
106-44-5	4-Methylphenol	2000	U	2000	2000
100-01-6	4-Nitroaniline	10000	U	10000	10000
100-02-7	4-Nitrophenol	10000	U	10000	10000
83-32-9	Acenaphthene	2000	U	2000	2000
208-96-8	Acenaphthylene	2000	U	2000	2000
98-86-2	Acetophenone	2000	U	2000	2000
120-12-7	Anthracene	2000	U	2000	2000
1912-24-9	Atrazine	2000	U	2000	2000
100-52-7	Benzaldehyde	2000	U	2000	2000
56-55-3	Benzo[a]anthracene	2000	U	2000	2000
50-32-8	Benzo[a]pyrene	2000	U	2000	2000
205-99-2	Benzo[b]fluoranthene	2000	U	2000	2000
191-24-2	Benzo[g,h,i]perylene	2000	U	2000	2000

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS04-SD02-1207
Lab Sample ID: 680-32771-2
Matrix: Solid
Lab File ID: e7797.d
Analysis Method: OLM04.3/SV
Date Received: 12/14/2007 09:20
Sample wt/vol: 30.07 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 17:28
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 66.7
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	2000	U	2000	2000
111-91-1	Bis(2-chloroethoxy)methane	2000	U	2000	2000
111-44-4	Bis(2-chloroethyl)ether	2000	U	2000	2000
117-81-7	Bis(2-ethylhexyl) phthalate	2000	U	2000	2000
85-68-7	Butyl benzyl phthalate	2000	U	2000	2000
105-60-2	Caprolactam	2000	U	2000	2000
86-74-8	Carbazole	2000	U	2000	2000
218-01-9	Chrysene	2000	U	2000	2000
84-74-2	Di-n-butyl phthalate	2000	U	2000	2000
117-84-0	Di-n-octyl phthalate	2000	U	2000	2000
53-70-3	Dibenz(a,h)anthracene	2000	U	2000	2000
132-64-9	Dibenzofuran	2000	U	2000	2000
84-66-2	Diethyl phthalate	2000	U	2000	2000
131-11-3	Dimethyl phthalate	2000	U	2000	2000
206-44-0	Fluoranthene	2000	U	2000	2000
86-73-7	Fluorene	2000	U	2000	2000
118-74-1	Hexachlorobenzene	2000	U	2000	2000
87-68-3	Hexachlorobutadiene	2000	U	2000	2000
77-47-4	Hexachlorocyclopentadiene	2000	U	2000	2000
67-72-1	Hexachloroethane	2000	U	2000	2000
193-39-5	Indeno[1,2,3-cd]pyrene	2000	U	2000	2000
78-59-1	Isophorone	2000	U	2000	2000
621-64-7	N-Nitrosodi-n-propylamine	2000	U	2000	2000
86-30-6	N-Nitrosodiphenylamine	2000	U	2000	2000
91-20-3	Naphthalene	2000	U	2000	2000
98-95-3	Nitrobenzene	2000	U	2000	2000
87-86-5	Pentachlorophenol	10000	U	10000	10000
85-01-8	Phenanthrene	2000	U	2000	2000
108-95-2	Phenol	2000	U	2000	2000
129-00-0	Pyrene	2000	U	2000	2000

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS04-SD02-1207 | Lab Sample ID: 680-32771-2
Matrix: Solid | Lab File ID: e7797.d
Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20
Sample wt/vol: 30.07 (g) | Date Extracted: 12/20/2007 19:20
Level: (low/med) Low | Date Analyzed: 01/14/2008 17:28
Con. Extract Vol.: 10 (mL) | Dilution Factor: 1
Injection Volume: | Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y | % Moisture: 66.7
Analy. Batch No.: 95787 | Units: ug/Kg
Number TICs Found: 10 | TIC Total: 12580

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~3100~~	A B,BC
872-05-9	1-Decene	7.17	250	N
	Unknown	9.70	730	
	Unknown	10.27	400	
630-07-9	Pentatriacontane	10.58	280	N
5717-37-3	(Carbethoxyethylidine)triphenylphosphora	10.89	2900	N
112-95-8	Eicosane	11.14	230	N
593-45-3	Octadecane	13.08	210	N
	Unknown	16.16	880	
	Unknown	16.30	3600	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS08-SD04-1207
Lab Sample ID: 680-32771-4
Matrix: Solid
Lab File ID: e7798.d
Analysis Method: OLM04.3/SV
Date Received: 12/14/2007 09:20
Sample wt/vol: 30.47 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 17:53
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 68.4
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	2100	U	2100	2100
108-60-1	2,2'-oxybis[1-chloropropane]	2100	U	2100	2100
95-95-4	2,4,5-Trichlorophenol	2100	U	2100	2100
88-06-2	2,4,6-Trichlorophenol	2100	U	2100	2100
120-83-2	2,4-Dichlorophenol	2100	U	2100	2100
105-67-9	2,4-Dimethylphenol	2100	U	2100	2100
51-28-5	2,4-Dinitrophenol	11000	U	11000	11000
121-14-2	2,4-Dinitrotoluene	2100	U	2100	2100
606-20-2	2,6-Dinitrotoluene	2100	U	2100	2100
91-58-7	2-Chloronaphthalene	2100	U	2100	2100
95-57-8	2-Chlorophenol	2100	U	2100	2100
91-57-6	2-Methylnaphthalene	2100	U	2100	2100
95-48-7	2-Methylphenol	2100	U	2100	2100
88-74-4	2-Nitroaniline	11000	U	11000	11000
88-75-5	2-Nitrophenol	2100	U	2100	2100
91-94-1	3,3'-Dichlorobenzidine	2100	U	2100	2100
99-09-2	3-Nitroaniline	11000	U	11000	11000
534-52-1	4,6-Dinitro-2-methylphenol	11000	U	11000	11000
101-55-3	4-Bromophenyl phenyl ether	2100	U	2100	2100
59-50-7	4-Chloro-3-methylphenol	2100	U	2100	2100
106-47-8	4-Chloroaniline	4100	U	4100	4100
7005-72-3	4-Chlorophenyl phenyl ether	2100	U	2100	2100
106-44-5	4-Methylphenol	2100	U	2100	2100
100-01-6	4-Nitroaniline	11000	U	11000	11000
100-02-7	4-Nitrophenol	11000	U	11000	11000
83-32-9	Acenaphthene	2100	U	2100	2100
208-96-8	Acenaphthylene	2100	U	2100	2100
98-86-2	Acetophenone	2100	U	2100	2100
120-12-7	Anthracene	2100	U	2100	2100
1912-24-9	Atrazine	2100	U	2100	2100
100-52-7	Benzaldehyde	2100	U	2100	2100
56-55-3	Benzo[a]anthracene	2100	U	2100	2100
50-32-8	Benzo[a]pyrene	2100	U	2100	2100
205-99-2	Benzo[b]fluoranthene	2100	U	2100	2100
191-24-2	Benzo[g,h,i]perylene	2100	U	2100	2100

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS08-SD04-1207
Lab Sample ID: 680-32771-4
Matrix: Solid
Lab File ID: e7798.d
Analysis Method: OLM04.3/SV
Date Received: 12/14/2007 09:20
Sample wt/vol: 30.47 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 17:53
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 68.4
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	2100	U	2100	2100
111-91-1	Bis(2-chloroethoxy)methane	2100	U	2100	2100
111-44-4	Bis(2-chloroethyl)ether	2100	U	2100	2100
117-81-7	Bis(2-ethylhexyl) phthalate	2100	U	2100	2100
85-68-7	Butyl benzyl phthalate	2100	U	2100	2100
105-60-2	Caprolactam	2100	U	2100	2100
86-74-8	Carbazole	2100	U	2100	2100
218-01-9	Chrysene	2100	U	2100	2100
84-74-2	Di-n-butyl phthalate	2100	U	2100	2100
117-84-0	Di-n-octyl phthalate	2100	U	2100	2100
53-70-3	Dibenz(a,h)anthracene	2100	U	2100	2100
132-64-9	Dibenzofuran	2100	U	2100	2100
84-66-2	Diethyl phthalate	2100	U	2100	2100
131-11-3	Dimethyl phthalate	2100	U	2100	2100
206-44-0	Fluoranthene	2100	U	2100	2100
86-73-7	Fluorene	2100	U	2100	2100
118-74-1	Hexachlorobenzene	2100	U	2100	2100
87-68-3	Hexachlorobutadiene	2100	U	2100	2100
77-47-4	Hexachlorocyclopentadiene	2100	U	2100	2100
67-72-1	Hexachloroethane	2100	U	2100	2100
193-39-5	Indeno[1,2,3-cd]pyrene	2100	U	2100	2100
78-59-1	Isophorone	2100	U	2100	2100
621-64-7	N-Nitrosodi-n-propylamine	2100	U	2100	2100
86-30-6	N-Nitrosodiphenylamine	2100	U	2100	2100
91-20-3	Naphthalene	2100	U	2100	2100
98-95-3	Nitrobenzene	2100	U	2100	2100
87-86-5	Pentachlorophenol	11000	U	11000	11000
85-01-8	Phenanthrene	2100	U	2100	2100
108-95-2	Phenol	2100	U	2100	2100
129-00-0	Pyrene	2100	U	2100	2100

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD04-1207 | Lab Sample ID: 680-32771-4

Matrix: Solid | Lab File ID: e7798.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 30.47 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 17:53

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 68.4

Analy. Batch No.: 95787 | Units: ug/Kg

Number TICs Found: 12 | TIC Total: 14930

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~3000~~	~~A~~ B,BL
112-53-8	1-Dodecanol	7.17	290	N
	Unknown	9.70	1300	
123-95-5	Octadecanoic acid, butyl ester	10.27	~~660~~	~~N~~ B,BL
646-31-1	Tetracosane	10.30	260	N
630-06-8	Hexatriacontane	10.58	270	N
5717-37-3	(Carbethoxyethylidine)triphenylphosphora	10.89	3600	N
593-49-7	Heptacosane	11.14	250	N
	Unknown	13.08	260	
	Unknown	13.65	280	
	Unknown Organic Acid	16.16	860	
	Unknown	16.30	3900	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD03-1207 | Lab Sample ID: 680-32771-6

Matrix: Solid | Lab File ID: e7799.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 30.07 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 18:18

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 63.8

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1800	U	1800	1800
108-60-1	2,2'-oxybis[1-chloropropane]	1800	U	1800	1800
95-95-4	2,4,5-Trichlorophenol	1800	U	1800	1800
88-06-2	2,4,6-Trichlorophenol	1800	U	1800	1800
120-83-2	2,4-Dichlorophenol	1800	U	1800	1800
105-67-9	2,4-Dimethylphenol	1800	U	1800	1800
51-28-5	2,4-Dinitrophenol	9400	U	9400	9400
121-14-2	2,4-Dinitrotoluene	1800	U	1800	1800
606-20-2	2,6-Dinitrotoluene	1800	U	1800	1800
91-58-7	2-Chloronaphthalene	1800	U	1800	1800
95-57-8	2-Chlorophenol	1800	U	1800	1800
91-57-6	2-Methylnaphthalene	1800	U	1800	1800
95-48-7	2-Methylphenol	1800	U	1800	1800
88-74-4	2-Nitroaniline	9400	U	9400	9400
88-75-5	2-Nitrophenol	1800	U	1800	1800
91-94-1	3,3'-Dichlorobenzidine	1800	U	1800	1800
99-09-2	3-Nitroaniline	9400	U	9400	9400
534-52-1	4,6-Dinitro-2-methylphenol	9400	U	9400	9400
101-55-3	4-Bromophenyl phenyl ether	1800	U	1800	1800
59-50-7	4-Chloro-3-methylphenol	1800	U	1800	1800
106-47-8	4-Chloroaniline	3600	U	3600	3600
7005-72-3	4-Chlorophenyl phenyl ether	1800	U	1800	1800
106-44-5	4-Methylphenol	1800	U	1800	1800
100-01-6	4-Nitroaniline	9400	U	9400	9400
100-02-7	4-Nitrophenol	9400	U	9400	9400
83-32-9	Acenaphthene	1800	U	1800	1800
208-96-8	Acenaphthylene	1800	U	1800	1800
98-86-2	Acetophenone	1800	U	1800	1800
120-12-7	Anthracene	1800	U	1800	1800
1912-24-9	Atrazine	1800	U	1800	1800
100-52-7	Benzaldehyde	1800	U	1800	1800
56-55-3	Benzo[a]anthracene	1800	U	1800	1800
50-32-8	Benzo[a]pyrene	1800	U	1800	1800
205-99-2	Benzo[b]fluoranthene	1800	U	1800	1800
191-24-2	Benzo[g,h,i]perylene	1800	U	1800	1800

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS08-SD03-1207
Lab Sample ID: 680-32771-6
Matrix: Solid
Lab File ID: e7799.d
Analysis Method: OLM04.3/SV
Date Received: 12/14/2007 09:20
Sample wt/vol: 30.07 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 18:18
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 63.8
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1800	U	1800	1800
111-91-1	Bis(2-chloroethoxy)methane	1800	U	1800	1800
111-44-4	Bis(2-chloroethyl)ether	1800	U	1800	1800
117-81-7	Bis(2-ethylhexyl) phthalate	1800	U	1800	1800
85-68-7	Butyl benzyl phthalate	1800	U	1800	1800
105-60-2	Caprolactam	1800	U	1800	1800
86-74-8	Carbazole	1800	U	1800	1800
218-01-9	Chrysene	1800	U	1800	1800
84-74-2	Di-n-butyl phthalate	1800	U	1800	1800
117-84-0	Di-n-octyl phthalate	1800	U	1800	1800
53-70-3	Dibenz(a,h)anthracene	1800	U	1800	1800
132-64-9	Dibenzofuran	1800	U	1800	1800
84-66-2	Diethyl phthalate	1800	U	1800	1800
131-11-3	Dimethyl phthalate	1800	U	1800	1800
206-44-0	Fluoranthene	1800	U	1800	1800
86-73-7	Fluorene	1800	U	1800	1800
118-74-1	Hexachlorobenzene	1800	U	1800	1800
87-68-3	Hexachlorobutadiene	1800	U	1800	1800
77-47-4	Hexachlorocyclopentadiene	1800	U	1800	1800
67-72-1	Hexachloroethane	1800	U	1800	1800
193-39-5	Indeno[1,2,3-cd]pyrene	1800	U	1800	1800
78-59-1	Isophorone	1800	U	1800	1800
621-64-7	N-Nitrosodi-n-propylamine	1800	U	1800	1800
86-30-6	N-Nitrosodiphenylamine	1800	U	1800	1800
91-20-3	Naphthalene	1800	U	1800	1800
98-95-3	Nitrobenzene	1800	U	1800	1800
87-86-5	Pentachlorophenol	9400	U	9400	9400
85-01-8	Phenanthrene	1800	U	1800	1800
108-95-2	Phenol	1800	U	1800	1800
129-00-0	Pyrene	1800	U	1800	1800

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD03-1207 | Lab Sample ID: 680-32771-6

Matrix: Solid | Lab File ID: e7799.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 30.07 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 18:18

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 63.8

Analy. Batch No.: 95787 | Units: ug/Kg

Number TICs Found: 14 | TIC Total: 16650

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~2900~~	A B,PBL
74663-85-7	Cyclopropane, nonyl-	7.17	260	N
	Unknown Organic Acid	9.69	~~2400~~	B,PBL
822-23-1	Acetic acid, octadecyl ester	9.76	180	N
123-95-5	Octadecanoic acid, butyl ester	10.27	~~1400~~	N B,PBL
17301-30-3	Undecane, 3,8-dimethyl-	10.30	290	N
629-99-2	Pentacosane	10.58	310	N
5717-37-3	(Carbethoxyethylidine)triphenylphosphora	10.89	2900	N
629-92-5	Nonadecane	11.14	240	N
112-95-8	Eicosane	11.45	200	N
7225-64-1	Heptadecane, 9-octyl-	11.79	180	N
112-95-8	Eicosane	13.08	230	N
	Unknown	16.16	760	
	Unknown	16.31	4400	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS08-SD02-1207
Lab Sample ID: 680-32771-8
Matrix: Solid
Lab File ID: e7800.d
Analysis Method: OLM04.3/SV
Date Received: 12/14/2007 09:20
Sample wt/vol: 30.07 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 18:43
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 64.5
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1900	U	1900	1900
108-60-1	2,2'-oxybis[1-chloropropane]	1900	U	1900	1900
95-95-4	2,4,5-Trichlorophenol	1900	U	1900	1900
88-06-2	2,4,6-Trichlorophenol	1900	U	1900	1900
120-83-2	2,4-Dichlorophenol	1900	U	1900	1900
105-67-9	2,4-Dimethylphenol	1900	U	1900	1900
51-28-5	2,4-Dinitrophenol	9500	U	9500	9500
121-14-2	2,4-Dinitrotoluene	1900	U	1900	1900
606-20-2	2,6-Dinitrotoluene	1900	U	1900	1900
91-58-7	2-Chloronaphthalene	1900	U	1900	1900
95-57-8	2-Chlorophenol	1900	U	1900	1900
91-57-6	2-Methylnaphthalene	1900	U	1900	1900
95-48-7	2-Methylphenol	1900	U	1900	1900
88-74-4	2-Nitroaniline	9500	U	9500	9500
88-75-5	2-Nitrophenol	1900	U	1900	1900
91-94-1	3,3'-Dichlorobenzidine	1900	U	1900	1900
99-09-2	3-Nitroaniline	9500	U	9500	9500
534-52-1	4,6-Dinitro-2-methylphenol	9500	U	9500	9500
101-55-3	4-Bromophenyl phenyl ether	1900	U	1900	1900
59-50-7	4-Chloro-3-methylphenol	1900	U	1900	1900
106-47-8	4-Chloroaniline	3700	U	3700	3700
7005-72-3	4-Chlorophenyl phenyl ether	1900	U	1900	1900
106-44-5	4-Methylphenol	1900	U	1900	1900
100-01-6	4-Nitroaniline	9500	U	9500	9500
100-02-7	4-Nitrophenol	9500	U	9500	9500
83-32-9	Acenaphthene	1900	U	1900	1900
208-96-8	Acenaphthylene	1900	U	1900	1900
98-86-2	Acetophenone	1900	U	1900	1900
120-12-7	Anthracene	1900	U	1900	1900
1912-24-9	Atrazine	1900	U	1900	1900
100-52-7	Benzaldehyde	1900	U	1900	1900
56-55-3	Benzo[a]anthracene	1900	U	1900	1900
50-32-8	Benzo[a]pyrene	1900	U	1900	1900
205-99-2	Benzo[b]fluoranthene	1900	U	1900	1900
191-24-2	Benzo[g,h,i]perylene	1900	U	1900	1900

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YS08-SD02-1207
Lab Sample ID: 680-32771-8
Matrix: Solid
Lab File ID: e7800.d
Analysis Method: OLM04.3/SV
Date Received: 12/14/2007 09:20
Sample wt/vol: 30.07 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 18:43
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 64.5
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1900	U	1900	1900
111-91-1	Bis(2-chloroethoxy)methane	1900	U	1900	1900
111-44-4	Bis(2-chloroethyl)ether	1900	U	1900	1900
117-81-7	Bis(2-ethylhexyl) phthalate	1900	U	1900	1900
85-68-7	Butyl benzyl phthalate	1900	U	1900	1900
105-60-2	Caprolactam	1900	U	1900	1900
86-74-8	Carbazole	1900	U	1900	1900
218-01-9	Chrysene	1900	U	1900	1900
84-74-2	Di-n-butyl phthalate	1900	U	1900	1900
117-84-0	Di-n-octyl phthalate	1900	U	1900	1900
53-70-3	Dibenz(a,h)anthracene	1900	U	1900	1900
132-64-9	Dibenzofuran	1900	U	1900	1900
84-66-2	Diethyl phthalate	1900	U	1900	1900
131-11-3	Dimethyl phthalate	1900	U	1900	1900
206-44-0	Fluoranthene	1900	U	1900	1900
86-73-7	Fluorene	1900	U	1900	1900
118-74-1	Hexachlorobenzene	1900	U	1900	1900
87-68-3	Hexachlorobutadiene	1900	U	1900	1900
77-47-4	Hexachlorocyclopentadiene	1900	U	1900	1900
67-72-1	Hexachloroethane	1900	U	1900	1900
193-39-5	Indeno[1,2,3-cd]pyrene	1900	U	1900	1900
78-59-1	Isophorone	1900	U	1900	1900
621-64-7	N-Nitrosodi-n-propylamine	1900	U	1900	1900
86-30-6	N-Nitrosodiphenylamine	1900	U	1900	1900
91-20-3	Naphthalene	1900	U	1900	1900
98-95-3	Nitrobenzene	1900	U	1900	1900
87-86-5	Pentachlorophenol	9500	U	9500	9500
85-01-8	Phenanthrene	1900	U	1900	1900
108-95-2	Phenol	1900	U	1900	1900
129-00-0	Pyrene	1900	U	1900	1900

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YS08-SD02-1207 | Lab Sample ID: 680-32771-8

Matrix: Solid | Lab File ID: e7800.d

Analysis Method: OLM04.3/SV | Date Received: 12/14/2007 09:20

Sample wt/vol: 30.07 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 18:43

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 64.5

Analy. Batch No.: 95787 | Units: ug/Kg

Number TICs Found: 9 | TIC Total: 11800

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~3400~~	~~A~~ B,BL
112-53-8	1-Dodecanol	7.17	300	N
	Unknown	9.70	680	
123-95-5	Octadecanoic acid, butyl ester	10.27	~~430~~	~~N~~ B,BL
1560-88-9	Octadecane, 2-methyl-	10.30	200	N
7225-66-3	Tridecane, 7-hexyl-	10.58	200	N
5717-37-3	(Carbethoxyethylidine)triphenylphosphora	10.89	2100	N
	Unknown	16.16	890	
	Unknown Organic Acid	16.31	3600	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD05-1207 | Lab Sample ID: 680-32816-2

Matrix: Solid | Lab File ID: e7803.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.44 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 19:56

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 63.3

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1800	U	1800	1800
108-60-1	2,2'-oxybis[1-chloropropane]	1800	U	1800	1800
95-95-4	2,4,5-Trichlorophenol	1800	U	1800	1800
88-06-2	2,4,6-Trichlorophenol	1800	U	1800	1800
120-83-2	2,4-Dichlorophenol	1800	U	1800	1800
105-67-9	2,4-Dimethylphenol	1800	U	1800	1800
51-28-5	2,4-Dinitrophenol	9100	U	9100	9100
121-14-2	2,4-Dinitrotoluene	1800	U	1800	1800
606-20-2	2,6-Dinitrotoluene	1800	U	1800	1800
91-58-7	2-Chloronaphthalene	1800	U	1800	1800
95-57-8	2-Chlorophenol	1800	U	1800	1800
91-57-6	2-Methylnaphthalene	1800	U	1800	1800
95-48-7	2-Methylphenol	1800	U	1800	1800
88-74-4	2-Nitroaniline	9100	U	9100	9100
88-75-5	2-Nitrophenol	1800	U	1800	1800
91-94-1	3,3'-Dichlorobenzidine	1800	U	1800	1800
99-09-2	3-Nitroaniline	9100	U	9100	9100
534-52-1	4,6-Dinitro-2-methylphenol	9100	U	9100	9100
101-55-3	4-Bromophenyl phenyl ether	1800	U	1800	1800
59-50-7	4-Chloro-3-methylphenol	1800	U	1800	1800
106-47-8	4-Chloroaniline	3500	U	3500	3500
7005-72-3	4-Chlorophenyl phenyl ether	1800	U	1800	1800
106-44-5	4-Methylphenol	1800	U	1800	1800
100-01-6	4-Nitroaniline	9100	U	9100	9100
100-02-7	4-Nitrophenol	9100	U	9100	9100
83-32-9	Acenaphthene	1800	U	1800	1800
208-96-8	Acenaphthylene	1800	U	1800	1800
98-86-2	Acetophenone	1800	U	1800	1800
120-12-7	Anthracene	1800	U	1800	1800
1912-24-9	Atrazine	1800	U	1800	1800
100-52-7	Benzaldehyde	1800	U	1800	1800
56-55-3	Benzo[a]anthracene	1800	U	1800	1800
50-32-8	Benzo[a]pyrene	1800	U	1800	1800
205-99-2	Benzo[b]fluoranthene	1800	U	1800	1800
191-24-2	Benzo[g,h,i]perylene	1800	U	1800	1800

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD05-1207 | Lab Sample ID: 680-32816-2

Matrix: Solid | Lab File ID: e7803.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.44 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 19:56

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 63.3

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1800	U	1800	1800
111-91-1	Bis(2-chloroethoxy)methane	1800	U	1800	1800
111-44-4	Bis(2-chloroethyl)ether	1800	U	1800	1800
117-81-7	Bis(2-ethylhexyl) phthalate	1800	U	1800	1800
85-68-7	Butyl benzyl phthalate	1800	U	1800	1800
105-60-2	Caprolactam	1800	U	1800	1800
86-74-8	Carbazole	1800	U	1800	1800
218-01-9	Chrysene	1800	U	1800	1800
84-74-2	Di-n-butyl phthalate	1800	U	1800	1800
117-84-0	Di-n-octyl phthalate	1800	U	1800	1800
53-70-3	Dibenz(a,h)anthracene	1800	U	1800	1800
132-64-9	Dibenzofuran	1800	U	1800	1800
84-66-2	Diethyl phthalate	1800	U	1800	1800
131-11-3	Dimethyl phthalate	1800	U	1800	1800
206-44-0	Fluoranthene	1800	U	1800	1800
86-73-7	Fluorene	1800	U	1800	1800
118-74-1	Hexachlorobenzene	1800	U	1800	1800
87-68-3	Hexachlorobutadiene	1800	U	1800	1800
77-47-4	Hexachlorocyclopentadiene	1800	U	1800	1800
67-72-1	Hexachloroethane	1800	U	1800	1800
193-39-5	Indeno[1,2,3-cd]pyrene	1800	U	1800	1800
78-59-1	Isophorone	1800	U	1800	1800
621-64-7	N-Nitrosodi-n-propylamine	1800	U	1800	1800
86-30-6	N-Nitrosodiphenylamine	1800	U	1800	1800
91-20-3	Naphthalene	1800	U	1800	1800
98-95-3	Nitrobenzene	1800	U	1800	1800
87-86-5	Pentachlorophenol	9100	U	9100	9100
85-01-8	Phenanthrene	1800	U	1800	1800
108-95-2	Phenol	1800	U	1800	1800
129-00-0	Pyrene	1800	U	1800	1800

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD05-1207 | Lab Sample ID: 680-32816-2

Matrix: Solid | Lab File ID: e7803.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.44 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 19:56

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 63.3

Analy. Batch No.: 95787 | Units: ug/Kg

Number TICs Found: 9 | TIC Total: 9920

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	2400	A B,BSL
293-96-9	Cyclodecane	7.17	240	N
	Unknown	9.70	780	
123-95-5	Octadecanoic acid, butyl ester	10.27	450	N B,BSL
112-95-8	Eicosane	10.58	190	N
791-28-6	Phosphine oxide, triphenyl-	10.89	1700	N
	Unknown Organic Acid	13.65	240	
	Unknown	16.16	820	
	Unknown	16.30	3100	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YSA14-SD02-1207
Lab Sample ID: 680-32816-4
Matrix: Solid
Lab File ID: e7804.d
Analysis Method: OLM04.3/SV
Date Received: 12/15/2007 10:11
Sample wt/vol: 30.21 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 20:21
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 47.7
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1300	U	1300	1300
108-60-1	2,2'-oxybis[1-chloropropane]	1300	U	1300	1300
95-95-4	2,4,5-Trichlorophenol	1300	U	1300	1300
88-06-2	2,4,6-Trichlorophenol	1300	U	1300	1300
120-83-2	2,4-Dichlorophenol	1300	U	1300	1300
105-67-9	2,4-Dimethylphenol	1300	U	1300	1300
51-28-5	2,4-Dinitrophenol	6500	U	6500	6500
121-14-2	2,4-Dinitrotoluene	1300	U	1300	1300
606-20-2	2,6-Dinitrotoluene	1300	U	1300	1300
91-58-7	2-Chloronaphthalene	1300	U	1300	1300
95-57-8	2-Chlorophenol	1300	U	1300	1300
91-57-6	2-Methylnaphthalene	1300	U	1300	1300
95-48-7	2-Methylphenol	1300	U	1300	1300
88-74-4	2-Nitroaniline	6500	U	6500	6500
88-75-5	2-Nitrophenol	1300	U	1300	1300
91-94-1	3,3'-Dichlorobenzidine	1300	U	1300	1300
99-09-2	3-Nitroaniline	6500	U	6500	6500
534-52-1	4,6-Dinitro-2-methylphenol	6500	U	6500	6500
101-55-3	4-Bromophenyl phenyl ether	1300	U	1300	1300
59-50-7	4-Chloro-3-methylphenol	1300	U	1300	1300
106-47-8	4-Chloroaniline	2500	U	2500	2500
7005-72-3	4-Chlorophenyl phenyl ether	1300	U	1300	1300
106-44-5	4-Methylphenol	1300	U	1300	1300
100-01-6	4-Nitroaniline	6500	U	6500	6500
100-02-7	4-Nitrophenol	6500	U	6500	6500
83-32-9	Acenaphthene	1300	U	1300	1300
208-96-8	Acenaphthylene	1300	U	1300	1300
98-86-2	Acetophenone	1300	U	1300	1300
120-12-7	Anthracene	1300	U	1300	1300
1912-24-9	Atrazine	1300	U	1300	1300
100-52-7	Benzaldehyde	1300	U	1300	1300
56-55-3	Benzo[a]anthracene	1300	U	1300	1300
50-32-8	Benzo[a]pyrene	1300	U	1300	1300
205-99-2	Benzo[b]fluoranthene	1300	U	1300	1300
191-24-2	Benzo[g,h,i]perylene	1300	U	1300	1300

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD02-1207 | Lab Sample ID: 680-32816-4

Matrix: Solid | Lab File ID: e7804.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.21 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 20:21

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 47.7

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1300	U	1300	1300
111-91-1	Bis(2-chloroethoxy)methane	1300	U	1300	1300
111-44-4	Bis(2-chloroethyl)ether	1300	U	1300	1300
117-81-7	Bis(2-ethylhexyl) phthalate	1300	U	1300	1300
85-68-7	Butyl benzyl phthalate	1300	U	1300	1300
105-60-2	Caprolactam	1300	U	1300	1300
86-74-8	Carbazole	1300	U	1300	1300
218-01-9	Chrysene	1300	U	1300	1300
84-74-2	Di-n-butyl phthalate	1300	U	1300	1300
117-84-0	Di-n-octyl phthalate	1300	U	1300	1300
53-70-3	Dibenz(a,h)anthracene	1300	U	1300	1300
132-64-9	Dibenzofuran	1300	U	1300	1300
84-66-2	Diethyl phthalate	1300	U	1300	1300
131-11-3	Dimethyl phthalate	1300	U	1300	1300
206-44-0	Fluoranthene	1300	U	1300	1300
86-73-7	Fluorene	1300	U	1300	1300
118-74-1	Hexachlorobenzene	1300	U	1300	1300
87-68-3	Hexachlorobutadiene	1300	U	1300	1300
77-47-4	Hexachlorocyclopentadiene	1300	U	1300	1300
67-72-1	Hexachloroethane	1300	U	1300	1300
193-39-5	Indeno[1,2,3-cd]pyrene	1300	U	1300	1300
78-59-1	Isophorone	1300	U	1300	1300
621-64-7	N-Nitrosodi-n-propylamine	1300	U	1300	1300
86-30-6	N-Nitrosodiphenylamine	1300	U	1300	1300
91-20-3	Naphthalene	1300	U	1300	1300
98-95-3	Nitrobenzene	1300	U	1300	1300
87-86-5	Pentachlorophenol	6500	U	6500	6500
85-01-8	Phenanthrene	1300	U	1300	1300
108-95-2	Phenol	1300	U	1300	1300
129-00-0	Pyrene	1300	U	1300	1300

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YSA14-SD02-1207
Lab Sample ID: 680-32816-4
Matrix: Solid
Lab File ID: e7804.d
Analysis Method: OLM04.3/SV
Date Received: 12/15/2007 10:11
Sample wt/vol: 30.21 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 20:21
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 47.7
Analy. Batch No.: 95787
Units: ug/Kg
Number TICs Found: 13
TIC Total: 9040

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~2100~~	~~A~~ B,BL
872-05-9	1-Decene	7.17	170	N
	Unknown	9.70	370	
511-15-9	2-Phenanthrenol, 4b,5,6,7,8,8a,9,10-octa	10.27	730	N
629-78-7	Heptadecane	10.30	130	N
629-99-2	Pentacosane	10.58	130	N
791-28-6	Phosphine oxide, triphenyl-	10.89	~~1100~~	~~N~~ B,BL
1599-67-3	1-Docosene	11.17	130	N
	Unknown	14.49	190	
	Unknown	14.75	160	
	Unknown	16.16	640	
	Unknown	16.31	2700	
	Unknown	16.56	490	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD03-1207 | Lab Sample ID: 680-32816-6

Matrix: Solid | Lab File ID: e7805.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.37 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 20:46

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 64.9

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1900	U	1900	1900
108-60-1	2,2'-oxybis[1-chloropropane]	1900	U	1900	1900
95-95-4	2,4,5-Trichlorophenol	1900	U	1900	1900
88-06-2	2,4,6-Trichlorophenol	1900	U	1900	1900
120-83-2	2,4-Dichlorophenol	1900	U	1900	1900
105-67-9	2,4-Dimethylphenol	1900	U	1900	1900
51-28-5	2,4-Dinitrophenol	9600	U	9600	9600
121-14-2	2,4-Dinitrotoluene	1900	U	1900	1900
606-20-2	2,6-Dinitrotoluene	1900	U	1900	1900
91-58-7	2-Chloronaphthalene	1900	U	1900	1900
95-57-8	2-Chlorophenol	1900	U	1900	1900
91-57-6	2-Methylnaphthalene	1900	U	1900	1900
95-48-7	2-Methylphenol	1900	U	1900	1900
88-74-4	2-Nitroaniline	9600	U	9600	9600
88-75-5	2-Nitrophenol	1900	U	1900	1900
91-94-1	3,3'-Dichlorobenzidine	1900	U	1900	1900
99-09-2	3-Nitroaniline	9600	U	9600	9600
534-52-1	4,6-Dinitro-2-methylphenol	9600	U	9600	9600
101-55-3	4-Bromophenyl phenyl ether	1900	U	1900	1900
59-50-7	4-Chloro-3-methylphenol	1900	U	1900	1900
106-47-8	4-Chloroaniline	3700	U	3700	3700
7005-72-3	4-Chlorophenyl phenyl ether	1900	U	1900	1900
106-44-5	4-Methylphenol	1900	U	1900	1900
100-01-6	4-Nitroaniline	9600	U	9600	9600
100-02-7	4-Nitrophenol	9600	U	9600	9600
83-32-9	Acenaphthene	1900	U	1900	1900
208-96-8	Acenaphthylene	1900	U	1900	1900
98-86-2	Acetophenone	1900	U	1900	1900
120-12-7	Anthracene	1900	U	1900	1900
1912-24-9	Atrazine	1900	U	1900	1900
100-52-7	Benzaldehyde	1900	U	1900	1900
56-55-3	Benzo[a]anthracene	1900	U	1900	1900
50-32-8	Benzo[a]pyrene	1900	U	1900	1900
205-99-2	Benzo[b]fluoranthene	1900	U	1900	1900
191-24-2	Benzo[g,h,i]perylene	1900	U	1900	1900

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD03-1207 | Lab Sample ID: 680-32816-6

Matrix: Solid | Lab File ID: e7805.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.37 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 20:46

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 64.9

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1900	U	1900	1900
111-91-1	Bis(2-chloroethoxy)methane	1900	U	1900	1900
111-44-4	Bis(2-chloroethyl)ether	1900	U	1900	1900
117-81-7	Bis(2-ethylhexyl) phthalate	1900	U	1900	1900
85-68-7	Butyl benzyl phthalate	1900	U	1900	1900
105-60-2	Caprolactam	1900	U	1900	1900
86-74-8	Carbazole	1900	U	1900	1900
218-01-9	Chrysene	1900	U	1900	1900
84-74-2	Di-n-butyl phthalate	1900	U	1900	1900
117-84-0	Di-n-octyl phthalate	1900	U	1900	1900
53-70-3	Dibenz(a,h)anthracene	1900	U	1900	1900
132-64-9	Dibenzofuran	1900	U	1900	1900
84-66-2	Diethyl phthalate	1900	U	1900	1900
131-11-3	Dimethyl phthalate	1900	U	1900	1900
206-44-0	Fluoranthene	1900	U	1900	1900
86-73-7	Fluorene	1900	U	1900	1900
118-74-1	Hexachlorobenzene	1900	U	1900	1900
87-68-3	Hexachlorobutadiene	1900	U	1900	1900
77-47-4	Hexachlorocyclopentadiene	1900	U	1900	1900
67-72-1	Hexachloroethane	1900	U	1900	1900
193-39-5	Indeno[1,2,3-cd]pyrene	1900	U	1900	1900
78-59-1	Isophorone	1900	U	1900	1900
621-64-7	N-Nitrosodi-n-propylamine	1900	U	1900	1900
86-30-6	N-Nitrosodiphenylamine	1900	U	1900	1900
91-20-3	Naphthalene	1900	U	1900	1900
98-95-3	Nitrobenzene	1900	U	1900	1900
87-86-5	Pentachlorophenol	9600	U	9600	9600
85-01-8	Phenanthrene	1900	U	1900	1900
108-95-2	Phenol	1900	U	1900	1900
129-00-0	Pyrene	1900	U	1900	1900

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YSA14-SD03-1207 | Lab Sample ID: 680-32816-6
Matrix: Solid | Lab File ID: e7805.d
Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11
Sample wt/vol: 30.37 (g) | Date Extracted: 12/20/2007 19:20
Level: (low/med) Low | Date Analyzed: 01/14/2008 20:46
Con. Extract Vol.: 10 (mL) | Dilution Factor: 1
Injection Volume: | Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y | % Moisture: 64.9
Analy. Batch No.: 95787 | Units: ug/Kg
Number TICs Found: 9 | TIC Total: 11430

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~3200~~	~~A~~ B,BL
293-96-9	Cyclodecane	7.17	260	N
	Unknown	9.70	690	
	Unknown Organic Acid	10.27	470	
629-78-7	Heptadecane	10.30	220	N
629-99-2	Pentacosane	10.58	200	N
791-28-6	Phosphine oxide, triphenyl-	10.89	~~1800~~	~~N~~ B,BL
	Unknown	16.16	890	
	Unknown	16.30	3700	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD02-1207 | Lab Sample ID: 680-32816-8

Matrix: Solid | Lab File ID: e7806.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.30 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 21:11

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 63.5

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1800	U	1800	1800
108-60-1	2,2'-oxybis[1-chloropropane]	1800	U	1800	1800
95-95-4	2,4,5-Trichlorophenol	1800	U	1800	1800
88-06-2	2,4,6-Trichlorophenol	1800	U	1800	1800
120-83-2	2,4-Dichlorophenol	1800	U	1800	1800
105-67-9	2,4-Dimethylphenol	1800	U	1800	1800
51-28-5	2,4-Dinitrophenol	9200	U	9200	9200
121-14-2	2,4-Dinitrotoluene	1800	U	1800	1800
606-20-2	2,6-Dinitrotoluene	1800	U	1800	1800
91-58-7	2-Chloronaphthalene	1800	U	1800	1800
95-57-8	2-Chlorophenol	1800	U	1800	1800
91-57-6	2-Methylnaphthalene	1800	U	1800	1800
95-48-7	2-Methylphenol	1800	U	1800	1800
88-74-4	2-Nitroaniline	9200	U	9200	9200
88-75-5	2-Nitrophenol	1800	U	1800	1800
91-94-1	3,3'-Dichlorobenzidine	1800	U	1800	1800
99-09-2	3-Nitroaniline	9200	U	9200	9200
534-52-1	4,6-Dinitro-2-methylphenol	9200	U	9200	9200
101-55-3	4-Bromophenyl phenyl ether	1800	U	1800	1800
59-50-7	4-Chloro-3-methylphenol	1800	U	1800	1800
106-47-8	4-Chloroaniline	3600	U	3600	3600
7005-72-3	4-Chlorophenyl phenyl ether	1800	U	1800	1800
106-44-5	4-Methylphenol	1800	U	1800	1800
100-01-6	4-Nitroaniline	9200	U	9200	9200
100-02-7	4-Nitrophenol	9200	U	9200	9200
83-32-9	Acenaphthene	1800	U	1800	1800
208-96-8	Acenaphthylene	1800	U	1800	1800
98-86-2	Acetophenone	1800	U	1800	1800
120-12-7	Anthracene	1800	U	1800	1800
1912-24-9	Atrazine	1800	U	1800	1800
100-52-7	Benzaldehyde	1800	U	1800	1800
56-55-3	Benzo[a]anthracene	1800	U	1800	1800
50-32-8	Benzo[a]pyrene	1800	U	1800	1800
205-99-2	Benzo[b]fluoranthene	1800	U	1800	1800
191-24-2	Benzo[g,h,i]perylene	1800	U	1800	1800

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD02-1207 | Lab Sample ID: 680-32816-8

Matrix: Solid | Lab File ID: e7806.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.30 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 21:11

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 63.5

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1800	U	1800	1800
111-91-1	Bis(2-chloroethoxy)methane	1800	U	1800	1800
111-44-4	Bis(2-chloroethyl)ether	1800	U	1800	1800
117-81-7	Bis(2-ethylhexyl) phthalate	1800	U	1800	1800
85-68-7	Butyl benzyl phthalate	1800	U	1800	1800
105-60-2	Caprolactam	1800	U	1800	1800
86-74-8	Carbazole	1800	U	1800	1800
218-01-9	Chrysene	1800	U	1800	1800
84-74-2	Di-n-butyl phthalate	1800	U	1800	1800
117-84-0	Di-n-octyl phthalate	1800	U	1800	1800
53-70-3	Dibenz(a,h)anthracene	1800	U	1800	1800
132-64-9	Dibenzofuran	1800	U	1800	1800
84-66-2	Diethyl phthalate	1800	U	1800	1800
131-11-3	Dimethyl phthalate	1800	U	1800	1800
206-44-0	Fluoranthene	1800	U	1800	1800
86-73-7	Fluorene	1800	U	1800	1800
118-74-1	Hexachlorobenzene	1800	U	1800	1800
87-68-3	Hexachlorobutadiene	1800	U	1800	1800
77-47-4	Hexachlorocyclopentadiene	1800	U	1800	1800
67-72-1	Hexachloroethane	1800	U	1800	1800
193-39-5	Indeno[1,2,3-cd]pyrene	1800	U	1800	1800
78-59-1	Isophorone	1800	U	1800	1800
621-64-7	N-Nitrosodi-n-propylamine	1800	U	1800	1800
86-30-6	N-Nitrosodiphenylamine	1800	U	1800	1800
91-20-3	Naphthalene	1800	U	1800	1800
98-95-3	Nitrobenzene	1800	U	1800	1800
87-86-5	Pentachlorophenol	9200	U	9200	9200
85-01-8	Phenanthrene	1800	U	1800	1800
108-95-2	Phenol	1800	U	1800	1800
129-00-0	Pyrene	1800	U	1800	1800

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD02-1207 | Lab Sample ID: 680-32816-8

Matrix: Solid | Lab File ID: e7806.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.30 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 21:11

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 63.5

Analy. Batch No.: 95787 | Units: ug/Kg

Number TICs Found: 11 | TIC Total: 14150

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	3100	A B,BL
74663-85-7	Cyclopropane, nonyl-	7.16	230	N
	Unknown	9.70	1900	
123-95-5	Octadecanoic acid, butyl ester	10.27	1100	N B,BL
646-31-1	Tetracosane	10.30	220	N
7225-66-3	Tridecane, 7-hexyl-	10.57	240	N
791-28-6	Phosphine oxide, triphenyl-	10.89	1600	N B,BL
630-06-8	Hexatriacontane	11.14	210	N
83-47-6	.gamma.-Sitosterol	14.36	210	N
	Unknown	16.16	940	
	Unknown	16.31	4400	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD03-1207 | Lab Sample ID: 680-32816-13

Matrix: Solid | Lab File ID: e7801.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.24 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 19:07

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 65.0

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1900	U	1900	1900
108-60-1	2,2'-oxybis[1-chloropropane]	1900	U	1900	1900
95-95-4	2,4,5-Trichlorophenol	1900	U	1900	1900
88-06-2	2,4,6-Trichlorophenol	1900	U	1900	1900
120-83-2	2,4-Dichlorophenol	1900	U	1900	1900
105-67-9	2,4-Dimethylphenol	1900	U	1900	1900
51-28-5	2,4-Dinitrophenol	9600	U	9600	9600
121-14-2	2,4-Dinitrotoluene	1900	U	1900	1900
606-20-2	2,6-Dinitrotoluene	1900	U	1900	1900
91-58-7	2-Chloronaphthalene	1900	U	1900	1900
95-57-8	2-Chlorophenol	1900	U	1900	1900
91-57-6	2-Methylnaphthalene	1900	U	1900	1900
95-48-7	2-Methylphenol	1900	U	1900	1900
88-74-4	2-Nitroaniline	9600	U	9600	9600
88-75-5	2-Nitrophenol	1900	U	1900	1900
91-94-1	3,3'-Dichlorobenzidine	1900	U	1900	1900
99-09-2	3-Nitroaniline	9600	U	9600	9600
534-52-1	4,6-Dinitro-2-methylphenol	9600	U	9600	9600
101-55-3	4-Bromophenyl phenyl ether	1900	U	1900	1900
59-50-7	4-Chloro-3-methylphenol	1900	U	1900	1900
106-47-8	4-Chloroaniline	3700	U	3700	3700
7005-72-3	4-Chlorophenyl phenyl ether	1900	U	1900	1900
106-44-5	4-Methylphenol	1900	U	1900	1900
100-01-6	4-Nitroaniline	9600	U	9600	9600
100-02-7	4-Nitrophenol	9600	U	9600	9600
83-32-9	Acenaphthene	1900	U	1900	1900
208-96-8	Acenaphthylene	1900	U	1900	1900
98-86-2	Acetophenone	1900	U	1900	1900
120-12-7	Anthracene	1900	U	1900	1900
1912-24-9	Atrazine	1900	U	1900	1900
100-52-7	Benzaldehyde	1900	U	1900	1900
56-55-3	Benzo[a]anthracene	1900	U	1900	1900
50-32-8	Benzo[a]pyrene	1900	U	1900	1900
205-99-2	Benzo[b]fluoranthene	1900	U	1900	1900
191-24-2	Benzo[g,h,i]perylene	1900	U	1900	1900

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD03-1207 | Lab Sample ID: 680-32816-13

Matrix: Solid | Lab File ID: e7801.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.24 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 19:07

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 65.0

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1900	U	1900	1900
111-91-1	Bis(2-chloroethoxy)methane	1900	U	1900	1900
111-44-4	Bis(2-chloroethyl)ether	1900	U	1900	1900
117-81-7	Bis(2-ethylhexyl) phthalate	1900	U	1900	1900
85-68-7	Butyl benzyl phthalate	1900	U	1900	1900
105-60-2	Caprolactam	1900	U	1900	1900
86-74-8	Carbazole	1900	U	1900	1900
218-01-9	Chrysene	1900	U	1900	1900
84-74-2	Di-n-butyl phthalate	1900	U	1900	1900
117-84-0	Di-n-octyl phthalate	1900	U	1900	1900
53-70-3	Dibenz(a,h)anthracene	1900	U	1900	1900
132-64-9	Dibenzofuran	1900	U	1900	1900
84-66-2	Diethyl phthalate	1900	U	1900	1900
131-11-3	Dimethyl phthalate	1900	U	1900	1900
206-44-0	Fluoranthene	1900	U	1900	1900
86-73-7	Fluorene	1900	U	1900	1900
118-74-1	Hexachlorobenzene	1900	U	1900	1900
87-68-3	Hexachlorobutadiene	1900	U	1900	1900
77-47-4	Hexachlorocyclopentadiene	1900	U	1900	1900
67-72-1	Hexachloroethane	1900	U	1900	1900
193-39-5	Indeno[1,2,3-cd]pyrene	1900	U	1900	1900
78-59-1	Isophorone	1900	U	1900	1900
621-64-7	N-Nitrosodi-n-propylamine	1900	U	1900	1900
86-30-6	N-Nitrosodiphenylamine	1900	U	1900	1900
91-20-3	Naphthalene	1900	U	1900	1900
98-95-3	Nitrobenzene	1900	U	1900	1900
87-86-5	Pentachlorophenol	9600	U	9600	9600
85-01-8	Phenanthrene	1900	U	1900	1900
108-95-2	Phenol	1900	U	1900	1900
129-00-0	Pyrene	1900	U	1900	1900

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD03-1207 | Lab Sample ID: 680-32816-13

Matrix: Solid | Lab File ID: e7801.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.24 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 19:07

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 65.0

Analy. Batch No.: 95787 | Units: ug/Kg

Number TICs Found: 7 | TIC Total: 11460

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~3000~~	~~A~~ B,PBL
74663-85-7	Cyclopropane, nonyl-	7.17	290	N
	Unknown Organic Acid	9.69	~~620~~	B,PBL
123-95-5	Octadecanoic acid, butyl ester	10.27	~~370~~	~~N~~ B,PBL
5717-37-3	(Carbethoxyethylidine)triphenylphosphora	10.89	2200	N
	Unknown	16.16	980	
	Unknown	16.31	4000	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD06-1207 | Lab Sample ID: 680-32816-15

Matrix: Solid | Lab File ID: e7802.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.36 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 19:32

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 64.1

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1800	U	1800	1800
108-60-1	2,2'-oxybis[1-chloropropane]	1800	U	1800	1800
95-95-4	2,4,5-Trichlorophenol	1800	U	1800	1800
88-06-2	2,4,6-Trichlorophenol	1800	U	1800	1800
120-83-2	2,4-Dichlorophenol	1800	U	1800	1800
105-67-9	2,4-Dimethylphenol	1800	U	1800	1800
51-28-5	2,4-Dinitrophenol	9300	U	9300	9300
121-14-2	2,4-Dinitrotoluene	1800	U	1800	1800
606-20-2	2,6-Dinitrotoluene	1800	U	1800	1800
91-58-7	2-Chloronaphthalene	1800	U	1800	1800
95-57-8	2-Chlorophenol	1800	U	1800	1800
91-57-6	2-Methylnaphthalene	1800	U	1800	1800
95-48-7	2-Methylphenol	1800	U	1800	1800
88-74-4	2-Nitroaniline	9300	U	9300	9300
88-75-5	2-Nitrophenol	1800	U	1800	1800
91-94-1	3,3'-Dichlorobenzidine	1800	U	1800	1800
99-09-2	3-Nitroaniline	9300	U	9300	9300
534-52-1	4,6-Dinitro-2-methylphenol	9300	U	9300	9300
101-55-3	4-Bromophenyl phenyl ether	1800	U	1800	1800
59-50-7	4-Chloro-3-methylphenol	1800	U	1800	1800
106-47-8	4-Chloroaniline	3600	U	3600	3600
7005-72-3	4-Chlorophenyl phenyl ether	1800	U	1800	1800
106-44-5	4-Methylphenol	1800	U	1800	1800
100-01-6	4-Nitroaniline	9300	U	9300	9300
100-02-7	4-Nitrophenol	9300	U	9300	9300
83-32-9	Acenaphthene	1800	U	1800	1800
208-96-8	Acenaphthylene	1800	U	1800	1800
98-86-2	Acetophenone	1800	U	1800	1800
120-12-7	Anthracene	1800	U	1800	1800
1912-24-9	Atrazine	1800	U	1800	1800
100-52-7	Benzaldehyde	1800	U	1800	1800
56-55-3	Benzo[a]anthracene	1800	U	1800	1800
50-32-8	Benzo[a]pyrene	1800	U	1800	1800
205-99-2	Benzo[b]fluoranthene	1800	U	1800	1800
191-24-2	Benzo[g,h,i]perylene	1800	U	1800	1800

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YBKG-SD06-1207
Lab Sample ID: 680-32816-15
Matrix: Solid
Lab File ID: e7802.d
Analysis Method: OLM04.3/SV
Date Received: 12/15/2007 10:11
Sample wt/vol: 30.36 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 19:32
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 64.1
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1800	U	1800	1800
111-91-1	Bis(2-chloroethoxy)methane	1800	U	1800	1800
111-44-4	Bis(2-chloroethyl)ether	1800	U	1800	1800
117-81-7	Bis(2-ethylhexyl) phthalate	1800	U	1800	1800
85-68-7	Butyl benzyl phthalate	1800	U	1800	1800
105-60-2	Caprolactam	1800	U	1800	1800
86-74-8	Carbazole	1800	U	1800	1800
218-01-9	Chrysene	1800	U	1800	1800
84-74-2	Di-n-butyl phthalate	1800	U	1800	1800
117-84-0	Di-n-octyl phthalate	1800	U	1800	1800
53-70-3	Dibenz(a,h)anthracene	1800	U	1800	1800
132-64-9	Dibenzofuran	1800	U	1800	1800
84-66-2	Diethyl phthalate	1800	U	1800	1800
131-11-3	Dimethyl phthalate	1800	U	1800	1800
206-44-0	Fluoranthene	1800	U	1800	1800
86-73-7	Fluorene	1800	U	1800	1800
118-74-1	Hexachlorobenzene	1800	U	1800	1800
87-68-3	Hexachlorobutadiene	1800	U	1800	1800
77-47-4	Hexachlorocyclopentadiene	1800	U	1800	1800
67-72-1	Hexachloroethane	1800	U	1800	1800
193-39-5	Indeno[1,2,3-cd]pyrene	1800	U	1800	1800
78-59-1	Isophorone	1800	U	1800	1800
621-64-7	N-Nitrosodi-n-propylamine	1800	U	1800	1800
86-30-6	N-Nitrosodiphenylamine	1800	U	1800	1800
91-20-3	Naphthalene	1800	U	1800	1800
98-95-3	Nitrobenzene	1800	U	1800	1800
87-86-5	Pentachlorophenol	9300	U	9300	9300
85-01-8	Phenanthrene	1800	U	1800	1800
108-95-2	Phenol	1800	U	1800	1800
129-00-0	Pyrene	1800	U	1800	1800

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YBKG-SD06-1207 | Lab Sample ID: 680-32816-15

Matrix: Solid | Lab File ID: e7802.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.36 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 19:32

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 64.1

Analy. Batch No.: 95787 | Units: ug/Kg

Number TICs Found: 12 | TIC Total: 11200

CAS No.	Compound Name	RT	Result	Q
	Unknown Aldol Condensate	3.53	~~3200~~	A ~~B,BL~~
112-53-8	1-Dodecanol	7.17	230	N
	Unknown	9.70	330	
	Unknown Organic Acid	10.27	200	
54833-48-6	Heptadecane, 2,6,10,15-tetramethyl-	10.57	220	N
791-28-6	Phosphine oxide, triphenyl-	10.89	~~2000~~	N ~~B,BL~~
	Unknown	13.65	600	
	Unknown	13.95	330	
	Unknown	15.23	240	
	Unknown	15.75	210	
	Unknown	16.16	840	
	Unknown	16.30	2800	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD03-1207 MS | Lab Sample ID: 680-32816-6 MS

Matrix: Solid | Lab File ID: e7807.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.29 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 21:35

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 64.9

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1900	U	1900	1900
108-60-1	2,2'-oxybis[1-chloropropane]	1900	U	1900	1900
95-95-4	2,4,5-Trichlorophenol	1900	U	1900	1900
88-06-2	2,4,6-Trichlorophenol	1900	U	1900	1900
120-83-2	2,4-Dichlorophenol	1900	U	1900	1900
105-67-9	2,4-Dimethylphenol	1900	U	1900	1900
51-28-5	2,4-Dinitrophenol	9600	U	9600	9600
121-14-2	2,4-Dinitrotoluene	3500		1900	1900
606-20-2	2,6-Dinitrotoluene	1900	U	1900	1900
91-58-7	2-Chloronaphthalene	1900	U	1900	1900
95-57-8	2-Chlorophenol	5000		1900	1900
91-57-6	2-Methylnaphthalene	1900	U	1900	1900
95-48-7	2-Methylphenol	1900	U	1900	1900
88-74-4	2-Nitroaniline	9600	U	9600	9600
88-75-5	2-Nitrophenol	1900	U	1900	1900
91-94-1	3,3'-Dichlorobenzidine	1900	U	1900	1900
99-09-2	3-Nitroaniline	9600	U	9600	9600
534-52-1	4,6-Dinitro-2-methylphenol	9600	U	9600	9600
101-55-3	4-Bromophenyl phenyl ether	1900	U	1900	1900
59-50-7	4-Chloro-3-methylphenol	5800		1900	1900
106-47-8	4-Chloroaniline	3700	U	3700	3700
7005-72-3	4-Chlorophenyl phenyl ether	1900	U	1900	1900
106-44-5	4-Methylphenol	1900	U	1900	1900
100-01-6	4-Nitroaniline	9600	U	9600	9600
100-02-7	4-Nitrophenol	9600	U	9600	9600
83-32-9	Acenaphthene	3300		1900	1900
208-96-8	Acenaphthylene	1900	U	1900	1900
98-86-2	Acetophenone	1900	U	1900	1900
120-12-7	Anthracene	1900	U	1900	1900
1912-24-9	Atrazine	1900	U	1900	1900
100-52-7	Benzaldehyde	1900	U	1900	1900
56-55-3	Benzo[a]anthracene	1900	U	1900	1900
50-32-8	Benzo[a]pyrene	1900	U	1900	1900
205-99-2	Benzo[b]fluoranthene	1900	U	1900	1900
191-24-2	Benzo[g,h,i]perylene	1900	U	1900	1900

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD03-1207 MS | Lab Sample ID: 680-32816-6 MS

Matrix: Solid | Lab File ID: e7807.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.29 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 21:35

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 64.9

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1900	U	1900	1900
111-91-1	Bis(2-chloroethoxy)methane	1900	U	1900	1900
111-44-4	Bis(2-chloroethyl)ether	1900	U	1900	1900
117-81-7	Bis(2-ethylhexyl) phthalate	1900	U	1900	1900
85-68-7	Butyl benzyl phthalate	1900	U	1900	1900
105-60-2	Caprolactam	1900	U	1900	1900
86-74-8	Carbazole	1900	U	1900	1900
218-01-9	Chrysene	1900	U	1900	1900
84-74-2	Di-n-butyl phthalate	1900	U	1900	1900
117-84-0	Di-n-octyl phthalate	1900	U	1900	1900
53-70-3	Dibenz(a,h)anthracene	1900	U	1900	1900
132-64-9	Dibenzofuran	1900	U	1900	1900
84-66-2	Diethyl phthalate	1900	U	1900	1900
131-11-3	Dimethyl phthalate	1900	U	1900	1900
206-44-0	Fluoranthene	1900	U	1900	1900
86-73-7	Fluorene	1900	U	1900	1900
118-74-1	Hexachlorobenzene	1900	U	1900	1900
87-68-3	Hexachlorobutadiene	1900	U	1900	1900
77-47-4	Hexachlorocyclopentadiene	1900	U	1900	1900
67-72-1	Hexachloroethane	1900	U	1900	1900
193-39-5	Indeno[1,2,3-cd]pyrene	1900	U	1900	1900
78-59-1	Isophorone	1900	U	1900	1900
621-64-7	N-Nitrosodi-n-propylamine	3500		1900	1900
86-30-6	N-Nitrosodiphenylamine	1900	U	1900	1900
91-20-3	Naphthalene	1900	U	1900	1900
98-95-3	Nitrobenzene	1900	U	1900	1900
87-86-5	Pentachlorophenol	9600	U	9600	9600
85-01-8	Phenanthrene	1900	U	1900	1900
108-95-2	Phenol	4800		1900	1900
129-00-0	Pyrene	3700		1900	1900

090

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-32714-1

SDG No.: YORK18

Client Sample ID: YSA14-SD03-1207 MSD | Lab Sample ID: 680-32816-6 MSD

Matrix: Solid | Lab File ID: e7808.d

Analysis Method: OLM04.3/SV | Date Received: 12/15/2007 10:11

Sample wt/vol: 30.11 (g) | Date Extracted: 12/20/2007 19:20

Level: (low/med) Low | Date Analyzed: 01/14/2008 21:59

Con. Extract Vol.: 10 (mL) | Dilution Factor: 1

Injection Volume: | Extract. Method: OLM04.3/SV

GPC Cleanup:(Y/N) Y | % Moisture: 64.9

Analy. Batch No.: 95787 | Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
92-52-4	1,1'-Biphenyl	1900	U	1900	1900
108-60-1	2,2'-oxybis[1-chloropropane]	1900	U	1900	1900
95-95-4	2,4,5-Trichlorophenol	1900	U	1900	1900
88-06-2	2,4,6-Trichlorophenol	1900	U	1900	1900
120-83-2	2,4-Dichlorophenol	1900	U	1900	1900
105-67-9	2,4-Dimethylphenol	1900	U	1900	1900
51-28-5	2,4-Dinitrophenol	9600	U	9600	9600
121-14-2	2,4-Dinitrotoluene	3900		1900	1900
606-20-2	2,6-Dinitrotoluene	1900	U	1900	1900
91-58-7	2-Chloronaphthalene	1900	U	1900	1900
95-57-8	2-Chlorophenol	5200		1900	1900
91-57-6	2-Methylnaphthalene	1900	U	1900	1900
95-48-7	2-Methylphenol	1900	U	1900	1900
88-74-4	2-Nitroaniline	9600	U	9600	9600
88-75-5	2-Nitrophenol	1900	U	1900	1900
91-94-1	3,3'-Dichlorobenzidine	1900	U	1900	1900
99-09-2	3-Nitroaniline	9600	U	9600	9600
534-52-1	4,6-Dinitro-2-methylphenol	9600	U	9600	9600
101-55-3	4-Bromophenyl phenyl ether	1900	U	1900	1900
59-50-7	4-Chloro-3-methylphenol	6100		1900	1900
106-47-8	4-Chloroaniline	3700	U	3700	3700
7005-72-3	4-Chlorophenyl phenyl ether	1900	U	1900	1900
106-44-5	4-Methylphenol	1900	U	1900	1900
100-01-6	4-Nitroaniline	9600	U	9600	9600
100-02-7	4-Nitrophenol	9600	U	9600	9600
83-32-9	Acenaphthene	3400		1900	1900
208-96-8	Acenaphthylene	1900	U	1900	1900
98-86-2	Acetophenone	1900	U	1900	1900
120-12-7	Anthracene	1900	U	1900	1900
1912-24-9	Atrazine	1900	U	1900	1900
100-52-7	Benzaldehyde	1900	U	1900	1900
56-55-3	Benzo[a]anthracene	1900	U	1900	1900
50-32-8	Benzo[a]pyrene	1900	U	1900	1900
205-99-2	Benzo[b]fluoranthene	1900	U	1900	1900
191-24-2	Benzo[g,h,i]perylene	1900	U	1900	1900

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-32714-1
SDG No.: YORK18
Client Sample ID: YSA14-SD03-1207 MSD
Lab Sample ID: 680-32816-6 MSD
Matrix: Solid
Lab File ID: e7808.d
Analysis Method: OLM04.3/SV
Date Received: 12/15/2007 10:11
Sample wt/vol: 30.11 (g)
Date Extracted: 12/20/2007 19:20
Level: (low/med) Low
Date Analyzed: 01/14/2008 21:59
Con. Extract Vol.: 10 (mL)
Dilution Factor: 1
Injection Volume:
Extract. Method: OLM04.3/SV
GPC Cleanup:(Y/N) Y
% Moisture: 64.9
Analy. Batch No.: 95787
Units: ug/Kg

CAS No.	Compound Name	Result	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	1900	U	1900	1900
111-91-1	Bis(2-chloroethoxy)methane	1900	U	1900	1900
111-44-4	Bis(2-chloroethyl)ether	1900	U	1900	1900
117-81-7	Bis(2-ethylhexyl) phthalate	1900	U	1900	1900
85-68-7	Butyl benzyl phthalate	1900	U	1900	1900
105-60-2	Caprolactam	1900	U	1900	1900
86-74-8	Carbazole	1900	U	1900	1900
218-01-9	Chrysene	1900	U	1900	1900
84-74-2	Di-n-butyl phthalate	1900	U	1900	1900
117-84-0	Di-n-octyl phthalate	1900	U	1900	1900
53-70-3	Dibenz(a,h)anthracene	1900	U	1900	1900
132-64-9	Dibenzofuran	1900	U	1900	1900
84-66-2	Diethyl phthalate	1900	U	1900	1900
131-11-3	Dimethyl phthalate	1900	U	1900	1900
206-44-0	Fluoranthene	1900	U	1900	1900
86-73-7	Fluorene	1900	U	1900	1900
118-74-1	Hexachlorobenzene	1900	U	1900	1900
87-68-3	Hexachlorobutadiene	1900	U	1900	1900
77-47-4	Hexachlorocyclopentadiene	1900	U	1900	1900
67-72-1	Hexachloroethane	1900	U	1900	1900
193-39-5	Indeno[1,2,3-cd]pyrene	1900	U	1900	1900
78-59-1	Isophorone	1900	U	1900	1900
621-64-7	N-Nitrosodi-n-propylamine	3800		1900	1900
86-30-6	N-Nitrosodiphenylamine	1900	U	1900	1900
91-20-3	Naphthalene	1900	U	1900	1900
98-95-3	Nitrobenzene	1900	U	1900	1900
87-86-5	Pentachlorophenol	9600	U	9600	9600
85-01-8	Phenanthrene	1900	U	1900	1900
108-95-2	Phenol	5100		1900	1900
129-00-0	Pyrene	3900		1900	1900

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USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SD02-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735668

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 37.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.61	J		P
7429-90-5	Aluminum	19300		J E SD	P
7440-36-0	Antimony	10.7	U		P
7440-38-2	Arsenic	12.4			P
7440-39-3	Barium	35.0	J	J E SD	P
7440-41-7	Beryllium	0.56	J		P
7440-70-2	Calcium	1900			P
7440-43-9	Cadmium	0.074	J		P
7440-48-4	Cobalt	6.7	J	J E SD	P
7440-47-3	Chromium	40.4		J E SD	P
7440-50-8	Copper	16.1			P
7439-89-6	Iron	37200		J E SD	P
7439-95-4	Magnesium	6020		J E SD	P
7439-96-5	Manganese	249		J E SD	P
7439-97-6	Mercury	0.13	J		CV
7440-23-5	Sodium	10600		J E SD	P
7440-02-0	Nickel	14.3			P
7439-92-1	Lead	29.5			P
7440-09-7	Potassium	3670		J E SD	P
7782-49-2	Selenium	1.0	J	B BL	P
7440-28-0	Thallium	4.5	U		P
7440-62-2	Vanadium	50.0		J E SD	P
7440-66-6	Zinc	83.2			P
57-12-5	Cyanide	0.34	J	L N MSL	AS

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Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SD03-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735669

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 35.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.4	J		P
7429-90-5	Aluminum	20900		J E SD	P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	12.6			P
7440-39-3	Barium	38.1		J E SD	P
7440-41-7	Beryllium	0.87	J		P
7440-70-2	Calcium	2380			P
7440-43-9	Cadmium	0.30	J		P
7440-48-4	Cobalt	8.3	J	J E SD	P
7440-47-3	Chromium	42.6		J E SD	P
7440-50-8	Copper	17.9			P
7439-89-6	Iron	35200		J E SD	P
7439-95-4	Magnesium	6740		J E SD	P
7439-96-5	Manganese	237		J E SD	P
7439-97-6	Mercury	0.13	J		CV
7440-23-5	Sodium	11000		J E SD	P
7440-02-0	Nickel	17.3			P
7439-92-1	Lead	33.0			P
7440-09-7	Potassium	4160		J E SD	P
7782-49-2	Selenium	0.71	J	B BL	P
7440-28-0	Thallium	4.7	U		P
7440-62-2	Vanadium	52.1		J E SD	P
7440-66-6	Zinc	119			P
57-12-5	Cyanide	0.22	J	L N MSL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

094

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YBKG-SD06-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735670

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 36.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.62	J		P
7429-90-5	Aluminum	18800		J E SD	P
7440-36-0	Antimony	11.5	U		P
7440-38-2	Arsenic	10.2			P
7440-39-3	Barium	37.7	J	J E SD	P
7440-41-7	Beryllium	0.81	J		P
7440-70-2	Calcium	2410			P
7440-43-9	Cadmium	0.11	J		P
7440-48-4	Cobalt	7.4	J	J E SD	P
7440-47-3	Chromium	38.2		J E SD	P
7440-50-8	Copper	12.7			P
7439-89-6	Iron	25700		J E SD	P
7439-95-4	Magnesium	6120		J E SD	P
7439-96-5	Manganese	428		J E SD	P
7439-97-6	Mercury	0.073	J	B BL	CV
7440-23-5	Sodium	6570		J E SD	P
7440-02-0	Nickel	15.8			P
7439-92-1	Lead	28.8			P
7440-09-7	Potassium	3720		J E SD	P
7782-49-2	Selenium	0.78	J	B BL	P
7440-28-0	Thallium	4.8	U		P
7440-62-2	Vanadium	46.2		J E SD	P
7440-66-6	Zinc	84.6			P
57-12-5	Cyanide	0.29	J	L N MBL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS04-SD02-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735417

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 33.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	2.3	U		P
7429-90-5	Aluminum	24700		J E SD	P
7440-36-0	Antimony	13.9	U		P
7440-38-2	Arsenic	13.1			P
7440-39-3	Barium	43.4	J	J E SD	P
7440-41-7	Beryllium	0.93	J		P
7440-70-2	Calcium	2260			P
7440-43-9	Cadmium	0.17	J		P
7440-48-4	Cobalt	10.2	J	J E SD	P
7440-47-3	Chromium	47.6		J E SD	P
7440-50-8	Copper	12.7			P
7439-89-6	Iron	43200		J E SD	P
7439-95-4	Magnesium	8170		J E SD	P
7439-96-5	Manganese	393		J E SD	P
7439-97-6	Mercury	0.071	J	B BL	CV
7440-23-5	Sodium	11200		J E SD	P
7440-02-0	Nickel	20.1			P
7439-92-1	Lead	23.3			P
7440-09-7	Potassium	4850		J E SD	P
7782-49-2	Selenium	0.89	J	B BL	P
7440-28-0	Thallium	5.8	U		P
7440-62-2	Vanadium	58.4		J E SD	P
7440-66-6	Zinc	76.9			P
57-12-5	Cyanide	7.4	U	UL MSL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SD02-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735389

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 36.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.36	J		P
7429-90-5	Aluminum	18700		J E SD	P
7440-36-0	Antimony	11.3	U		P
7440-38-2	Arsenic	11.4			P
7440-39-3	Barium	36.6	J	J E SD	P
7440-41-7	Beryllium	0.74	J		P
7440-70-2	Calcium	2180			P
7440-43-9	Cadmium	0.21	J		P
7440-48-4	Cobalt	7.2	J	J E SD	P
7440-47-3	Chromium	38.2		J E SD	P
7440-50-8	Copper	16.4			P
7439-89-6	Iron	35300		J E SD	P
7439-95-4	Magnesium	6410		J E SD	P
7439-96-5	Manganese	235		J E SD	P
7439-97-6	Mercury	0.13	J	B BL	CV
7440-23-5	Sodium	11400		J E SD	P
7440-02-0	Nickel	15.9			P
7439-92-1	Lead	28.3			P
7440-09-7	Potassium	3970		J E SD	P
7782-49-2	Selenium	6.6	U		P
7440-28-0	Thallium	4.7	U		P
7440-62-2	Vanadium	46.3		J E SD	P
7440-66-6	Zinc	106			P
57-12-5	Cyanide	5.4	U	UL MSL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

097

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SD03-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735388

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 36.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.45	J		P
7429-90-5	Aluminum	18100		J E SD	P
7440-36-0	Antimony	11.0	U		P
7440-38-2	Arsenic	9.6			P
7440-39-3	Barium	33.4	~~J~~	J E SD	P
7440-41-7	Beryllium	0.69	J		P
7440-70-2	Calcium	2090			P
7440-43-9	Cadmium	0.19	J		P
7440-48-4	Cobalt	7.1	~~J~~	J E SD	P
7440-47-3	Chromium	37.5		J E SD	P
7440-50-8	Copper	15.9			P
7439-89-6	Iron	30400		J E SD	P
7439-95-4	Magnesium	6280		J E SD	P
7439-96-5	Manganese	235		J E SD	P
7439-97-6	Mercury	0.13	J		CV
7440-23-5	Sodium	11400		J E SD	P
7440-02-0	Nickel	15.5			P
7439-92-1	Lead	27.8			P
7440-09-7	Potassium	3890		J E SD	P
7782-49-2	Selenium	1.1	~~J~~	B BL	P
7440-28-0	Thallium	4.6	U		P
7440-62-2	Vanadium	46.5		J E SD	P
7440-66-6	Zinc	99.4			P
57-12-5	Cyanide	5.4	~~U~~	HL MBL	AS

pc 22608

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-SD04-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735387

Level (low/med): LOW Date Received: 12/14/2007

% Solids: 32.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	2.2	U		P
7429-90-5	Aluminum	26500		J ~~E~~ SD	P
7440-36-0	Antimony	13.4	U		P
7440-38-2	Arsenic	13.4			P
7440-39-3	Barium	46.6		J ~~E~~ SD	P
7440-41-7	Beryllium	1.1	J		P
7440-70-2	Calcium	2310			P
7440-43-9	Cadmium	1.1	U		P
7440-48-4	Cobalt	10.5	~~J~~	J ~~E~~ SD	P
7440-47-3	Chromium	47.9		J ~~E~~ SD	P
7440-50-8	Copper	14.7			P
7439-89-6	Iron	50300		J ~~E~~ SD	P
7439-95-4	Magnesium	7670		J ~~E~~ SD	P
7439-96-5	Manganese	412		J ~~E~~ SD	P
7439-97-6	Mercury	0.096	~~J~~	B BL	CV
7440-23-5	Sodium	9960		J ~~E~~ SD	P
7440-02-0	Nickel	19.5			P
7439-92-1	Lead	32.3			P
7440-09-7	Potassium	4800		J ~~E~~ SD	P
7782-49-2	Selenium	0.62	~~J~~	B BL	P
7440-28-0	Thallium	5.6	U		P
7440-62-2	Vanadium	60.9		J ~~E~~ SD	P
7440-66-6	Zinc	73.0			P
57-12-5	Cyanide	6.4	~~U~~	UC MSL	AS

JAC 22608

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

099

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SD04-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735181

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 40.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.8	U		P
7429-90-5	Aluminum	20900		J SD	P
7440-36-0	Antimony	10.9	U		P
7440-38-2	Arsenic	10.3			P
7440-39-3	Barium	34.9	J	J SD	P
7440-41-7	Beryllium	0.80	J		P
7440-70-2	Calcium	2250			P
7440-43-9	Cadmium	0.11	J		P
7440-48-4	Cobalt	9.0	J	J SD	P
7440-47-3	Chromium	44.3		J SD	P
7440-50-8	Copper	8.3			P
7439-89-6	Iron	35700		J SD	P
7439-95-4	Magnesium	7840		J SD	P
7439-96-5	Manganese	294		J SD	P
7439-97-6	Mercury	0.044	J	B BL	CV
7440-23-5	Sodium	8470		J SD	P
7440-02-0	Nickel	18.7			P
7439-92-1	Lead	15.0			P
7440-09-7	Potassium	4480		J SD	P
7782-49-2	Selenium	6.3	U		P
7440-28-0	Thallium	4.5	U		P
7440-62-2	Vanadium	47.0		J SD	P
7440-66-6	Zinc	62.4			P
57-12-5	Cyanide	6.2	U	UL MSL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SD05-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735182

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 42.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.8	U		P
7429-90-5	Aluminum	19800		J SD	P
7440-36-0	Antimony	10.6	U		P
7440-38-2	Arsenic	10.0			P
7440-39-3	Barium	33.9	~~J~~	J SD	P
7440-41-7	Beryllium	0.74	J		P
7440-70-2	Calcium	2030			P
7440-43-9	Cadmium	0.12	J		P
7440-48-4	Cobalt	9.3		J SD	P
7440-47-3	Chromium	42.6		J SD	P
7440-50-8	Copper	7.9			P
7439-89-6	Iron	33400		J SD	P
7439-95-4	Magnesium	7560		J SD	P
7439-96-5	Manganese	303		J SD	P
7439-97-6	Mercury	0.038	~~J~~	B BL	CV
7440-23-5	Sodium	8770		J SD	P
7440-02-0	Nickel	18.4			P
7439-92-1	Lead	14.8			P
7440-09-7	Potassium	4560		J SD	P
7782-49-2	Selenium	6.2	U		P
7440-28-0	Thallium	4.4	U		P
7440-62-2	Vanadium	44.5		J SD	P
7440-66-6	Zinc	62.8			P
57-12-5	Cyanide	5.7	~~U~~	UL MSL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS22-SD06-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735183

Level (low/med): LOW Date Received: 12/13/2007

% Solids: 29.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.0	J		P
7429-90-5	Aluminum	24400		J SD	P
7440-36-0	Antimony	15.1	U		P
7440-38-2	Arsenic	14.5			P
7440-39-3	Barium	43.2	J	J SD	P
7440-41-7	Beryllium	0.84	J		P
7440-70-2	Calcium	3140			P
7440-43-9	Cadmium	0.46	J		P
7440-48-4	Cobalt	9.1	J	J SD	P
7440-47-3	Chromium	48.3		J SD	P
7440-50-8	Copper	22.2			P
7439-89-6	Iron	45300		J SD	P
7439-95-4	Magnesium	8490		J SD	P
7439-96-5	Manganese	297		J SD	P
7439-97-6	Mercury	0.20	J		CV
7440-23-5	Sodium	12900		J SD	P
7440-02-0	Nickel	20.4			P
7439-92-1	Lead	36.7			P
7440-09-7	Potassium	4840		J SD	P
7782-49-2	Selenium	8.8	U		P
7440-28-0	Thallium	6.3	U		P
7440-62-2	Vanadium	60.5		J SD	P
7440-66-6	Zinc	141			P
57-12-5	Cyanide	8.2	U	LL MSL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

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1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SD02-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735666

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 52.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.11	J		P
7429-90-5	Aluminum	6390		J ~~E~~ SD	P
7440-36-0	Antimony	8.1	U		P
7440-38-2	Arsenic	8.3			P
7440-39-3	Barium	12.7	J	J ~~E~~ SD	P
7440-41-7	Beryllium	0.37	J		P
7440-70-2	Calcium	3920			P
7440-43-9	Cadmium	0.058	J		P
7440-48-4	Cobalt	3.3	~~J~~	J ~~E~~ SD	P
7440-47-3	Chromium	16.3		J E SD	P
7440-50-8	Copper	5.3			P
7439-89-6	Iron	26400		J ~~E~~ SD	P
7439-95-4	Magnesium	2440		J ~~E~~ SD	P
7439-96-5	Manganese	100		J ~~E~~ SD	P
7439-97-6	Mercury	0.050	~~J~~	B BL	CV
7440-23-5	Sodium	3380		J ~~E~~ SD	P
7440-02-0	Nickel	5.8			P
7439-92-1	Lead	8.3			P
7440-09-7	Potassium	2000		J ~~E~~ SD	P
7782-49-2	Selenium	0.59	~~J~~	B BL	P
7440-28-0	Thallium	3.4	U		P
7440-62-2	Vanadium	18.6		J ~~E~~ SD	P
7440-66-6	Zinc	35.1			P
57-12-5	Cyanide	4.1	~~U~~	UL N NDL	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SD03-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735667

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 35.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.64	J		P
7429-90-5	Aluminum	21400		J E SD	P
7440-36-0	Antimony	12.0	U		P
7440-38-2	Arsenic	12.4			P
7440-39-3	Barium	40.1		J E SD	P
7440-41-7	Beryllium	0.88	J		P
7440-70-2	Calcium	2460			P
7440-43-9	Cadmium	0.32	J		P
7440-48-4	Cobalt	8.1	J	J E SD	P
7440-47-3	Chromium	44.5		J E SD	P
7440-50-8	Copper	19.2			P
7439-89-6	Iron	35300		J E SD	P
7439-95-4	Magnesium	6990		J E SD	P
7439-96-5	Manganese	214		J E SD	P
7439-97-6	Mercury	0.16	J		CV
7440-23-5	Sodium	11300		J E SD	P
7440-02-0	Nickel	18.2			P
7439-92-1	Lead	32.9			P
7440-09-7	Potassium	4340		J E SD	P
7782-49-2	Selenium	0.80	J	B BL	P
7440-28-0	Thallium	5.0	U		P
7440-62-2	Vanadium	52.7		J E SD	P
7440-66-6	Zinc	129			P
57-12-5	Cyanide	5.7	U	UL N MBL	AS

JAC 2/26/08

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

104

USEPA-CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YSA14-SD05-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Lab Sample ID: 735665

Level (low/med): LOW Date Received: 12/15/2007

% Solids: 37.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	2.1	U		P
7429-90-5	Aluminum	18800		J E SD	P
7440-36-0	Antimony	12.6	U		P
7440-38-2	Arsenic	8.8			P
7440-39-3	Barium	34.0	~~J~~	J E SD	P
7440-41-7	Beryllium	0.78	J		P
7440-70-2	Calcium	2040			P
7440-43-9	Cadmium	0.095	J		P
7440-48-4	Cobalt	7.8	~~J~~	J E SD	P
7440-47-3	Chromium	36.4		J E SD	P
7440-50-8	Copper	9.5			P
7439-89-6	Iron	35200		J E SD	P
7439-95-4	Magnesium	5950		J E SD	P
7439-96-5	Manganese	389		J E SD	P
7439-97-6	Mercury	0.069	~~J~~	B BL	CV
7440-23-5	Sodium	7380		J E SD	P
7440-02-0	Nickel	14.2			P
7439-92-1	Lead	18.7			P
7440-09-7	Potassium	3670		J E SD	P
7782-49-2	Selenium	0.57	~~J~~	B BL	P
7440-28-0	Thallium	5.2	U		P
7440-62-2	Vanadium	45.4		J E SD	P
7440-66-6	Zinc	56.4			P
57-12-5	Cyanide	5.8	~~U~~	UL N CN	AS

Color Before: brown Clarity Before: Texture: fine

Color After: brown Clarity After: cloudy Artifacts:

Comments:

105

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS22-SD04-1207

Lab Name: TAL BURLINGTON Contract: 27000

Lab Code: STLVT Case No.: 27000 SDG No.: YORK18

Matrix: SEDIMENT Client: SUBR7 Lab Sample ID: 735181

% Solids: 40.0 Date Received: 12/13/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0017	01/04/2008	11:50	PBSEM121507B
SW6010B	Cadmium	0.0078	umole/g	~~B~~ J SD		0.00052	01/04/2008	11:50	PBSEM121507B
SW6010B	Copper	0.022	umole/g	~~B~~ J		0.0046	01/04/2008	11:50	PBSEM121507B
SW6010B	Nickel	0.078	umole/g	~~B~~ J SD		0.0039	01/04/2008	11:50	PBSEM121507B
SW6010B	Lead	0.021	umole/g	~~B~~ J SD		0.0023	01/04/2008	11:50	PBSEM121507B
SW6010B	Zinc	0.51	umole/g			0.00090	01/04/2008	11:50	PBSEM121507B
SW7470A	Mercury	ND	umole/g	U		0.00030	01/18/2008	12:10	PBSEMHG011508
AVS	Acid Volatile Sulfide	ND	umole/g	U		1.2	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	NA							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS22-SD05-1207

Lab Name: TAL BURLINGTON Contract: 27000

Lab Code: STLVT Case No.: 27000 SDG No.: YORK18

Matrix: SEDIMENT Client: SUBR7 Lab Sample ID: 735182

% Solids: 42.0 Date Received: 12/13/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0014	01/04/2008	12:04	PBSEM121507B
SW6010B	Cadmium	0.00081	umole/g	B ~~J~~ SD		0.00045	01/04/2008	12:04	PBSEM121507B
SW6010B	Copper	ND	umole/g	U		0.0041	01/04/2008	12:04	PBSEM121507B
SW6010B	Nickel	0.060	umole/g	B ~~J~~ SD		0.0034	01/04/2008	12:04	PBSEM121507B
SW6010B	Lead	0.013	umole/g	B ~~J~~ SD		0.0020	01/04/2008	12:04	PBSEM121507B
SW6010B	Zinc	0.42	umole/g			0.00078	01/04/2008	12:04	PBSEM121507B
SW7470A	Mercury	ND	umole/g	U		0.00029	01/18/2008	12:12	PBSEMHG011508
AVS	Acid Volatile Sulfide	ND	umole/g	U		1.0	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	NA							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS22-SD06-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK18

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735183

% Solids: 29.0

Date Received: 12/13/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0021	01/04/2008	12:07	PBSEM121507B
SW6010B	Cadmium	0.0047	umole/g	B J	SD	0.00068	01/04/2008	12:07	PBSEM121507B
SW6010B	Copper	0.077	umole/g	B J		0.0060	01/04/2008	12:07	PBSEM121507B
SW6010B	Nickel	0.053	umole/g	B J	SD	0.0053	01/04/2008	12:07	PBSEM121507B
SW6010B	Lead	0.071	umole/g	J	SD	0.0029	01/04/2008	12:07	PBSEM121507B
SW6010B	Zinc	1.2	umole/g			0.0012	01/04/2008	12:07	PBSEM121507B
SW7470A	Mercury	ND	umole/g	U		0.00037	01/18/2008	12:14	PBSEMHG011508
AVS	Acid Volatile Sulfide	10.7	umole/g			1.6	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	0.13							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS08-SD04-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK18

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735387

% Solids: 32.0

Date Received: 12/14/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0020	01/04/2008	12:24	PBSEM122107A
SW6010B	Cadmium	0.0032	umole/g	~~B~~ J	SD	0.00064	01/04/2008	12:24	PBSEM122107A
SW6010B	Copper	0.0098	umole/g	~~B~~ B	BL	0.0057	01/04/2008	12:24	PBSEM122107A
SW6010B	Nickel	0.12	umole/g	B J	SD	0.0049	01/04/2008	12:24	PBSEM122107A
SW6010B	Lead	0.064	umole/g	J	SD	0.0028	01/04/2008	12:24	PBSEM122107A
SW6010B	Zinc	0.95	umole/g			0.0011	01/04/2008	12:24	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00036	01/18/2008	10:48	PBSEMHG011508
AVS	Acid Volatile Sulfide	ND	umole/g	U		1.4	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	NA							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS08-SD03-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK18

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735388

% Solids: 36.0

Date Received: 12/14/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.0030	umole/g	B J		0.0019	01/04/2008	12:28	PBSEM122107A
SW6010B	Cadmium	0.0020	umole/g	B J	SD	0.00061	01/04/2008	12:28	PBSEM122107A
SW6010B	Copper	0.14	umole/g	B	BC	0.0054	01/04/2008	12:28	PBSEM122107A
SW6010B	Nickel	0.12	umole/g	B J	SD	0.0048	01/04/2008	12:28	PBSEM122107A
SW6010B	Lead	0.092	umole/g	J	SD	0.0027	01/04/2008	12:28	PBSEM122107A
SW6010B	Zinc	1.1	umole/g			0.0011	01/04/2008	12:28	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00034	01/18/2008	10:50	PBSEMHG011608
AVS	Acid Volatile Sulfide	4.8	umole/g			1.4	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	0.31							

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS08-SD02-1207

Lab Name: TAL BURLINGTON Contract: 27000

Lab Code: STLVT Case No.: 27000 SDG No.: YORK18

Matrix: SEDIMENT Client: SUBR7 Lab Sample ID: 735389

% Solids: 36.0 Date Received: 12/14/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0019	01/04/2008	12:31	PBSEM122107A
SW6010B	Cadmium	0.0023	umole/g	~~B~~ J	SD	0.00060	01/04/2008	12:31	PBSEM122107A
SW6010B	Copper	0.14	umole/g	~~B~~ B	BL	0.0054	01/04/2008	12:31	PBSEM122107A
SW6010B	Nickel	0.13	umole/g	~~B~~ J	SD	0.0046	01/04/2008	12:31	PBSEM122107A
SW6010B	Lead	0.094	umole/g	J	SD	0.0026	01/04/2008	12:31	PBSEM122107A
SW6010B	Zinc	1.3	umole/g			0.0010	01/04/2008	12:31	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00032	01/18/2008	10:52	PBSEMHG011508
AVS	Acid Volatile Sulfide	ND	umole/g	U		1.3	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	NA							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS04-SD02-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK18

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735417

% Solids: 33.0

Date Received: 12/14/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0020	01/04/2008	12:21	PBSEM122107A
SW6010B	Cadmium	0.0041	umole/g	B J	SD	0.00065	01/04/2008	12:21	PBSEM122107A
SW6010B	Copper	0.022	umole/g	B J	BL	0.0058	01/04/2008	12:21	PBSEM122107A
SW6010B	Nickel	0.13	umole/g	B J	SD	0.0049	01/04/2008	12:21	PBSEM122107A
SW6010B	Lead	0.056	umole/g	J	SD	0.0028	01/04/2008	12:21	PBSEM122107A
SW6010B	Zinc	0.57	umole/g			0.0011	01/04/2008	12:21	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00036	01/18/2008	10:46	PBSEMHG011608
AVS	Acid Volatile Sulfide	ND	umole/g	U		1.5	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	NA							

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YSA14-SD05-1207

Lab Name: TAL BURLINGTON | Contract: 27000

Lab Code: STLVT | Case No.: 27000 | SDG No.: YORK18

Matrix: SEDIMENT | Client: SUBR7 | Lab Sample ID: 735665

% Solids: 37.0 | Date Received: 12/15/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0018	01/04/2008	12:34	PBSEM122107A
SW6010B	Cadmium	0.00084	umole/g	~~B~~ J	SD	0.00057	01/04/2008	12:34	PBSEM122107A
SW6010B	Copper	ND	umole/g	U		0.0060	01/04/2008	12:34	PBSEM122107A
SW6010B	Nickel	0.092	umole/g	~~B~~ J	SD	0.0044	01/04/2008	12:34	PBSEM122107A
SW6010B	Lead	0.045	umole/g	J	SD	0.0025	01/04/2008	12:34	PBSEM122107A
SW6010B	Zinc	0.55	umole/g			0.00098	01/04/2008	12:34	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00033	01/18/2008	10:54	PBSEMHG011608
AVS	Acid Volatile Sulfide	3.2	umole/g			1.3	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	0.22							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

459.8

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YSA14-SD02-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK18

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735666

% Solids: 52.0

Date Received: 12/15/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0013	01/04/2008	12:45	PBSEM122107A
SW6010B	Cadmium	0.00098	umole/g	~~B~~ J SD		0.00043	01/04/2008	12:45	PBSEM122107A
SW6010B	Copper	0.0087	umole/g	~~B~~ J SD		0.0038	01/04/2008	12:45	PBSEM122107A
SW6010B	Nickel	0.032	umole/g	~~B~~ J SD		0.0032	01/04/2008	12:45	PBSEM122107A
SW6010B	Lead	0.018	umole/g	~~B~~ J SD		0.0018	01/04/2008	12:45	PBSEM122107A
SW6010B	Zinc	0.38	umole/g			0.00073	01/04/2008	12:45	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00021	01/18/2008	10:59	PBSEMHG011508
AVS	Acid Volatile Sulfide	0.96	umole/g			0.96	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	0.46							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YSA14-SD03-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK18

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735667

% Solids: 35.0

Date Received: 12/15/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0019	01/04/2008	12:48	PBSEM122107A
SW6010B	Cadmium	0.0016	umole/g	B J	SD	0.00062	01/04/2008	12:48	PBSEM122107A
SW6010B	Copper	0.16	umole/g	B B	BL	0.0066	01/04/2008	12:48	PBSEM122107A
SW6010B	Nickel	0.12	umole/g	B J	SD	0.0048	01/04/2008	12:48	PBSEM122107A
SW6010B	Lead	0.11	umole/g	J	SD	0.0027	01/04/2008	12:48	PBSEM122107A
SW6010B	Zinc	1.3	umole/g			0.0011	01/04/2008	12:48	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00032	01/18/2008	11:01	PBSEMHG011508
AVS	Acid Volatile Sulfide	ND	umole/g	U		1.4	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	NA							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YBKG-SD02-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK18

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735668

% Solids: 37.0

Date Received: 12/15/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.0035	umole/g	B J		0.0019	01/04/2008	12:51	PBSEM122107A
SW6010B	Cadmium	0.00072	umole/g	B J	SD	0.00060	01/04/2008	12:51	PBSEM122107A
SW6010B	Copper	0.14	umole/g	B	BL	0.0054	01/04/2008	12:51	PBSEM122107A
SW6010B	Nickel	0.095	umole/g	B J	SD	0.0046	01/04/2008	12:51	PBSEM122107A
SW6010B	Lead	0.094	umole/g	J	SD	0.0026	01/04/2008	12:51	PBSEM122107A
SW6010B	Zinc	0.87	umole/g			0.0010	01/04/2008	12:51	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00031	01/18/2008	11:03	PBSEMHG011508
AVS	Acid Volatile Sulfide	ND	umole/g	U		1.3	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	NA							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YBKG-SD03-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK18

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735669

% Solids: 35.0

Date Received: 12/15/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0019	01/04/2008	12:55	PBSEM122107A
SW6010B	Cadmium	0.0014	umole/g	~~B~~ J	SD	0.00061	01/04/2008	12:55	PBSEM122107A
SW6010B	Copper	0.13	umole/g	~~B~~ B	BL	0.0055	01/04/2008	12:55	PBSEM122107A
SW6010B	Nickel	0.10	umole/g	B J	SD	0.0048	01/04/2008	12:55	PBSEM122107A
SW6010B	Lead	0.091	umole/g	J	SD	0.0027	01/04/2008	12:55	PBSEM122107A
SW6010B	Zinc	1.1	umole/g			0.0011	01/04/2008	12:55	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00032	01/18/2008	11:05	PBSEMHG011508
AVS	Acid Volatile Sulfide	27.9	umole/g			1.4	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	0.050							

**SEM is user defined to include the sum of the concentration of each metal reported with this case.*

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YBKG-SD06-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK18

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735670

% Solids: 36.0

Date Received: 12/15/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	ND	umole/g	U		0.0019	01/04/2008	12:58	PBSEM122107A
SW6010B	Cadmium	0.00098	umole/g	~~B~~ J	SD	0.00060	01/04/2008	12:58	PBSEM122107A
SW6010B	Copper	0.020	umole/g	~~B~~ B	BL	0.0052	01/04/2008	12:58	PBSEM122107A
SW6010B	Nickel	0.095	umole/g	~~B~~ J	SD	0.0046	01/04/2008	12:58	PBSEM122107A
SW6010B	Lead	0.042	umole/g	J	SD	0.0026	01/04/2008	12:58	PBSEM122107A
SW6010B	Zinc	0.47	umole/g			0.0010	01/04/2008	12:58	PBSEM122107A
SW7470A	Mercury	ND	umole/g	U		0.00034	01/18/2008	11:07	PBSEMHG011508
AVS	Acid Volatile Sulfide	2.3	umole/g			1.3	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	0.27							

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

TestAmerica Burlington

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L140400 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/14/07
Work Order: KD8D91AD Date Extracted:12/18/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:60

QC Batch: 7352087

Client Sample Id: YS22-SD04-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.2	U
319-84-6	alpha-BHC	4.2	U
319-85-7	beta-BHC	4.2	U
319-86-8	delta-BHC	4.2	U
58-89-9	gamma-BHC (Lindane)	4.2	U
5103-71-9	alpha-Chlordane	4.2	U
5103-74-2	gamma-Chlordane	4.2	U
72-54-8	4,4'-DDD	8.2	U
72-55-9	4,4'-DDE	8.2	U
50-29-3	4,4'-DDT	8.2	U
60-57-1	Dieldrin	8.2	U
959-98-8	Endosulfan I	4.2	U
33213-65-9	Endosulfan II	8.2	U
1031-07-8	Endosulfan sulfate	8.2	U
72-20-8	Endrin	8.2	U
7421-93-4	Endrin aldehyde	8.2	U
53494-70-5	Endrin ketone	8.2	U
76-44-8	Heptachlor	4.2	U
1024-57-3	Heptachlor epoxide	4.2	U
72-43-5	Methoxychlor	42	U
12674-11-2	Aroclor 1016	82	U
11104-28-2	Aroclor 1221	170	U
11141-16-5	Aroclor 1232	82	U
53469-21-9	Aroclor 1242	82	U
12672-29-6	Aroclor 1248	82	U
11097-69-1	Aroclor 1254	82	U
11096-82-5	Aroclor 1260	82	U
8001-35-2	Toxaphene	420	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L140400 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/14/07
Work Order: KD8EK1AC Date Extracted:12/18/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:58

QC Batch: 7352087

Client Sample Id: YS22-SD05-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.0	U
319-84-6	alpha-BHC	4.0	U
319-85-7	beta-BHC	4.0	U
319-86-8	delta-BHC	4.0	U
58-89-9	gamma-BHC (Lindane)	4.0	U
5103-71-9	alpha-Chlordane	4.0	U
5103-74-2	gamma-Chlordane	4.0	U
72-54-8	4,4'-DDD	7.9	U
72-55-9	4,4'-DDE	7.9	U
50-29-3	4,4'-DDT	7.9	U
60-57-1	Dieldrin	7.9	U
959-98-8	Endosulfan I	4.0	U
33213-65-9	Endosulfan II	7.9	U
1031-07-8	Endosulfan sulfate	7.9	U
72-20-8	Endrin	7.9	U
7421-93-4	Endrin aldehyde	7.9	U
53494-70-5	Endrin ketone	7.9	U
76-44-8	Heptachlor	4.0	U
1024-57-3	Heptachlor epoxide	4.0	U
72-43-5	Methoxychlor	40	U
12674-11-2	Aroclor 1016	79	U
11104-28-2	Aroclor 1221	160	U
11141-16-5	Aroclor 1232	79	U
53469-21-9	Aroclor 1242	79	U
12672-29-6	Aroclor 1248	79	U
11097-69-1	Aroclor 1254	79	U
11096-82-5	Aroclor 1260	79	U
8001-35-2	Toxaphene	400	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L140400 003
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/14/07
Work Order: KD8EP1AC Date Extracted:12/18/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:71

QC Batch: 7352087

Client Sample Id: YS22-SD06-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	5.9	U
319-84-6	alpha-BHC	5.9	U
319-85-7	beta-BHC	5.9	U
319-86-8	delta-BHC	5.9	U
58-89-9	gamma-BHC (Lindane)	5.9	U
5103-71-9	alpha-Chlordane	5.9	U
5103-74-2	gamma-Chlordane	5.9	U
72-54-8	4,4'-DDD	11	U
72-55-9	4,4'-DDE	11	U
50-29-3	4,4'-DDT	11	U
60-57-1	Dieldrin	11	U
959-98-8	Endosulfan I	5.9	U
33213-65-9	Endosulfan II	11	U
1031-07-8	Endosulfan sulfate	11	U
72-20-8	Endrin	11	U
7421-93-4	Endrin aldehyde	11	U
53494-70-5	Endrin ketone	11	U
76-44-8	Heptachlor	5.9	U
1024-57-3	Heptachlor epoxide	5.9	U
72-43-5	Methoxychlor	59	U
12674-11-2	Aroclor 1016	110	U
11104-28-2	Aroclor 1221	230	U
11141-16-5	Aroclor 1232	110	U
53469-21-9	Aroclor 1242	110	U
12672-29-6	Aroclor 1248	110	U
11097-69-1	Aroclor 1254	110	U
11096-82-5	Aroclor 1260	110	U
8001-35-2	Toxaphene	590	U

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK18

Matrix: (soil/water) SOLID Lab Sample ID: C7L150135 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30.2 / g Date Received: 12/15/07
Work Order: KD82W1AC Date Extracted: 12/18/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %: 67

QC Batch: 7352087

Client Sample Id: YS04-SD02-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	5.2	U
319-84-6	alpha-BHC	5.2	U
319-85-7	beta-BHC	5.2	U
319-86-8	delta-BHC	5.2	U
58-89-9	gamma-BHC (Lindane)	5.2	U
5103-71-9	alpha-Chlordane	5.2	U
5103-74-2	gamma-Chlordane	5.2	U
72-54-8	4,4'-DDD	10	U
72-55-9	4,4'-DDE	10	U
50-29-3	4,4'-DDT	10	U
60-57-1	Dieldrin	10	U
959-98-8	Endosulfan I	5.2	U
33213-65-9	Endosulfan II	10	U
1031-07-8	Endosulfan sulfate	10	U
72-20-8	Endrin	10	U
7421-93-4	Endrin aldehyde	10	U
53494-70-5	Endrin ketone	10	U
76-44-8	Heptachlor	5.2	U
1024-57-3	Heptachlor epoxide	5.2	U
72-43-5	Methoxychlor	52	U
12674-11-2	Aroclor 1016	100	U
11104-28-2	Aroclor 1221	200	U
11141-16-5	Aroclor 1232	100	U
53469-21-9	Aroclor 1242	100	U
12672-29-6	Aroclor 1248	100	U
11097-69-1	Aroclor 1254	100	U
11096-82-5	Aroclor 1260	100	U
8001-35-2	Toxaphene	520	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L150135 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/15/07
Work Order: KD82X1AC Date Extracted:12/18/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:68

QC Batch: 7352087

Client Sample Id: YS08-SD04-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	5.3	U
319-84-6	alpha-BHC	5.3	U
319-85-7	beta-BHC	5.3	U
319-86-8	delta-BHC	5.3	U
58-89-9	gamma-BHC (Lindane)	5.3	U
5103-71-9	alpha-Chlordane	5.3	U
5103-74-2	gamma-Chlordane	5.3	U
72-54-8	4,4'-DDD	10	U
72-55-9	4,4'-DDE	10	U
50-29-3	4,4'-DDT	10	U
60-57-1	Dieldrin	10	U
959-98-8	Endosulfan I	5.3	U
33213-65-9	Endosulfan II	10	U
1031-07-8	Endosulfan sulfate	10	U
72-20-8	Endrin	10	U
7421-93-4	Endrin aldehyde	10	U
53494-70-5	Endrin ketone	10	U
76-44-8	Heptachlor	5.3	U
1024-57-3	Heptachlor epoxide	5.3	U
72-43-5	Methoxychlor	53	U
12674-11-2	Aroclor 1016	100	U
11104-28-2	Aroclor 1221	210	U
11141-16-5	Aroclor 1232	100	U
53469-21-9	Aroclor 1242	100	U
12672-29-6	Aroclor 1248	100	U
11097-69-1	Aroclor 1254	100	U
11096-82-5	Aroclor 1260	100	U
8001-35-2	Toxaphene	530	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L150135 003
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g
Work Order: KD8201AC
Dilution factor: 1
Moisture %:64

Date Received: 12/15/07
Date Extracted:12/18/07
Date Analyzed: 01/08/08

QC Batch: 7352087

Client Sample Id: YS08-SD03-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.7	U
319-84-6	alpha-BHC	4.7	U
319-85-7	beta-BHC	4.7	U
319-86-8	delta-BHC	4.7	U
58-89-9	gamma-BHC (Lindane)	4.7	U
5103-71-9	alpha-Chlordane	4.7	U
5103-74-2	gamma-Chlordane	4.7	U
72-54-8	4,4'-DDD	9.2	U
72-55-9	4,4'-DDE	9.2	U
50-29-3	4,4'-DDT	9.2	U
60-57-1	Dieldrin	9.2	U
959-98-8	Endosulfan I	4.7	U
33213-65-9	Endosulfan II	9.2	U
1031-07-8	Endosulfan sulfate	9.2	U
72-20-8	Endrin	9.2	U
7421-93-4	Endrin aldehyde	9.2	U
53494-70-5	Endrin ketone	9.2	U
76-44-8	Heptachlor	4.7	U
1024-57-3	Heptachlor epoxide	4.7	U
72-43-5	Methoxychlor	47	U
12674-11-2	Aroclor 1016	92	U
11104-28-2	Aroclor 1221	190	U
11141-16-5	Aroclor 1232	92	U
53469-21-9	Aroclor 1242	92	U
12672-29-6	Aroclor 1248	92	U
11097-69-1	Aroclor 1254	92	U
11096-82-5	Aroclor 1260	92	U
8001-35-2	Toxaphene	470	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L150135 004
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/15/07
Work Order: KD8231AC Date Extracted:12/18/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:64

QC Batch: 7352087

Client Sample Id: YS08-SD02-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.7	U
319-84-6	alpha-BHC	4.7	U
319-85-7	beta-BHC	4.7	U
319-86-8	delta-BHC	4.7	U
58-89-9	gamma-BHC (Lindane)	4.7	U
5103-71-9	alpha-Chlordane	4.7	U
5103-74-2	gamma-Chlordane	4.7	U
72-54-8	4,4'-DDD	9.2	U
72-55-9	4,4'-DDE	9.2	U
50-29-3	4,4'-DDT	9.2	U
60-57-1	Dieldrin	9.2	U
959-98-8	Endosulfan I	4.7	U
33213-65-9	Endosulfan II	9.2	U
1031-07-8	Endosulfan sulfate	9.2	U
72-20-8	Endrin	9.2	U
7421-93-4	Endrin aldehyde	9.2	U
53494-70-5	Endrin ketone	9.2	U
76-44-8	Heptachlor	4.7	U
1024-57-3	Heptachlor epoxide	4.7	U
72-43-5	Methoxychlor	47	U
12674-11-2	Aroclor 1016	92	U
11104-28-2	Aroclor 1221	190	U
11141-16-5	Aroclor 1232	92	U
53469-21-9	Aroclor 1242	92	U
12672-29-6	Aroclor 1248	92	U
11097-69-1	Aroclor 1254	92	U
11096-82-5	Aroclor 1260	92	U
8001-35-2	Toxaphene	470	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L180269 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/18/07
Work Order: KED2V1AC Date Extracted:12/20/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:63

QC Batch: 7354026

Client Sample Id: YSA14-SD05-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.6	U
319-84-6	alpha-BHC	4.6	U
319-85-7	beta-BHC	4.6	U
319-86-8	delta-BHC	4.6	U
58-89-9	gamma-BHC (Lindane)	4.6	U
5103-71-9	alpha-Chlordane	4.6	U
5103-74-2	gamma-Chlordane	4.6	U
72-54-8	4,4'-DDD	8.9	U
72-55-9	4,4'-DDE	8.9	U
50-29-3	4,4'-DDT	8.9	U
60-57-1	Dieldrin	8.9	U
959-98-8	Endosulfan I	4.6	U
33213-65-9	Endosulfan II	8.9	U
1031-07-8	Endosulfan sulfate	8.9	U
72-20-8	Endrin	8.9	U
7421-93-4	Endrin aldehyde	8.9	U
53494-70-5	Endrin ketone	8.9	U
76-44-8	Heptachlor	4.6	U
1024-57-3	Heptachlor epoxide	4.6	U
72-43-5	Methoxychlor	46	U
12674-11-2	Aroclor 1016	89	U
11104-28-2	Aroclor 1221	180	U
11141-16-5	Aroclor 1232	89	U
53469-21-9	Aroclor 1242	89	U
12672-29-6	Aroclor 1248	89	U
11097-69-1	Aroclor 1254	89	U
11096-82-5	Aroclor 1260	89	U
8001-35-2	Toxaphene	460	U

FORM I

TestAmerica Burlington
MATRIX SPIKE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L180269 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/18/07
Work Order: KED2V1AD Date Extracted:12/20/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:63

QC Batch: 7354026

Client Sample Id: YSA14-SD05-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	30.4	
58-89-9	gamma-BHC (Lindane)	14.9	a
50-29-3	4,4'-DDT	31.6	
60-57-1	Dieldrin	62.3	
72-20-8	Endrin	69.2	
76-44-8	Heptachlor	30.1	

FORM I

TestAmerica Burlington
MATRIX SPIKE DUPLICATE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L180269 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/18/07
Work Order: KED2V1AE Date Extracted:12/20/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:63

QC Batch: 7354026

Client Sample Id: YSA14-SD05-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	28.1	
58-89-9	gamma-BHC (Lindane)	14.0	a
50-29-3	4,4'-DDT	29.0	
60-57-1	Dieldrin	56.8	
72-20-8	Endrin	64.5	
76-44-8	Heptachlor	28.5	

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L180269 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g
Work Order: KED2X1AC
Dilution factor: 1
Moisture %:48

Date Received: 12/18/07
Date Extracted:12/20/07
Date Analyzed: 01/08/08

QC Batch: 7354026

Client Sample Id: YSA14-SD02-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	3.3	U
319-84-6	alpha-BHC	3.3	U
319-85-7	beta-BHC	3.3	U
319-86-8	delta-BHC	3.3	U
58-89-9	gamma-BHC (Lindane)	3.3	U
5103-71-9	alpha-Chlordane	3.3	U
5103-74-2	gamma-Chlordane	3.3	U
72-54-8	4,4'-DDD	6.3	U
72-55-9	4,4'-DDE	6.3	U
50-29-3	4,4'-DDT	6.3	U
60-57-1	Dieldrin	6.3	U
959-98-8	Endosulfan I	3.3	U
33213-65-9	Endosulfan II	6.3	U
1031-07-8	Endosulfan sulfate	6.3	U
72-20-8	Endrin	6.3	U
7421-93-4	Endrin aldehyde	6.3	U
53494-70-5	Endrin ketone	6.3	U
76-44-8	Heptachlor	3.3	U
1024-57-3	Heptachlor epoxide	3.3	U
72-43-5	Methoxychlor	33	U
12674-11-2	Aroclor 1016	63	U
11104-28-2	Aroclor 1221	130	U
11141-16-5	Aroclor 1232	63	U
53469-21-9	Aroclor 1242	63	U
12672-29-6	Aroclor 1248	63	U
11097-69-1	Aroclor 1254	63	U
11096-82-5	Aroclor 1260	63	U
8001-35-2	Toxaphene	330	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L180269 003
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g
Work Order: KED201AC
Dilution factor: 1
Moisture %:65

Date Received: 12/18/07
Date Extracted:12/20/07
Date Analyzed: 01/08/08

QC Batch: 7354026

Client Sample Id: YSA14-SD03-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.9	U
319-84-6	alpha-BHC	4.9	U
319-85-7	beta-BHC	4.9	U
319-86-8	delta-BHC	4.9	U
58-89-9	gamma-BHC (Lindane)	4.9	U
5103-71-9	alpha-Chlordane	4.9	U
5103-74-2	gamma-Chlordane	4.9	U
72-54-8	4,4'-DDD	9.4	U
72-55-9	4,4'-DDE	9.4	U
50-29-3	4,4'-DDT	9.4	U
60-57-1	Dieldrin	9.4	U
959-98-8	Endosulfan I	4.9	U
33213-65-9	Endosulfan II	9.4	U
1031-07-8	Endosulfan sulfate	9.4	U
72-20-8	Endrin	9.4	U
7421-93-4	Endrin aldehyde	9.4	U
53494-70-5	Endrin ketone	9.4	U
76-44-8	Heptachlor	4.9	U
1024-57-3	Heptachlor epoxide	4.9	U
72-43-5	Methoxychlor	49	U
12674-11-2	Aroclor 1016	94	U
11104-28-2	Aroclor 1221	190	U
11141-16-5	Aroclor 1232	94	U
53469-21-9	Aroclor 1242	94	U
12672-29-6	Aroclor 1248	94	U
11097-69-1	Aroclor 1254	94	U
11096-82-5	Aroclor 1260	94	U
8001-35-2	Toxaphene	490	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L180269 004
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/18/07
Work Order: KED211AC Date Extracted:12/20/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:63

QC Batch: 7354026

Client Sample Id: YBKG-SD02-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.6	U
319-84-6	alpha-BHC	4.6	U
319-85-7	beta-BHC	4.6	U
319-86-8	delta-BHC	4.6	U
58-89-9	gamma-BHC (Lindane)	4.6	U
5103-71-9	alpha-Chlordane	4.6	U
5103-74-2	gamma-Chlordane	4.6	U
72-54-8	4,4'-DDD	8.9	U
72-55-9	4,4'-DDE	8.9	U
50-29-3	4,4'-DDT	8.9	U
60-57-1	Dieldrin	8.9	U
959-98-8	Endosulfan I	4.6	U
33213-65-9	Endosulfan II	8.9	U
1031-07-8	Endosulfan sulfate	8.9	U
72-20-8	Endrin	8.9	U
7421-93-4	Endrin aldehyde	8.9	U
53494-70-5	Endrin ketone	8.9	U
76-44-8	Heptachlor	4.6	U
1024-57-3	Heptachlor epoxide	4.6	U
72-43-5	Methoxychlor	46	U
12674-11-2	Aroclor 1016	89	U
11104-28-2	Aroclor 1221	180	U
11141-16-5	Aroclor 1232	89	U
53469-21-9	Aroclor 1242	89	U
12672-29-6	Aroclor 1248	89	U
11097-69-1	Aroclor 1254	89	U
11096-82-5	Aroclor 1260	89	U
8001-35-2	Toxaphene	460	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L180269 005
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/18/07
Work Order: KED221AC Date Extracted:12/20/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:65

QC Batch: 7354026

Client Sample Id: YBKG-SD03-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.9	U
319-84-6	alpha-BHC	4.9	U
319-85-7	beta-BHC	4.9	U
319-86-8	delta-BHC	4.9	U
58-89-9	gamma-BHC (Lindane)	4.9	U
5103-71-9	alpha-Chlordane	4.9	U
5103-74-2	gamma-Chlordane	4.9	U
72-54-8	4,4'-DDD	9.4	U
72-55-9	4,4'-DDE	9.4	U
50-29-3	4,4'-DDT	9.4	U
60-57-1	Dieldrin	9.4	U
959-98-8	Endosulfan I	4.9	U
33213-65-9	Endosulfan II	9.4	U
1031-07-8	Endosulfan sulfate	9.4	U
72-20-8	Endrin	9.4	U
7421-93-4	Endrin aldehyde	9.4	U
53494-70-5	Endrin ketone	9.4	U
76-44-8	Heptachlor	4.9	U
1024-57-3	Heptachlor epoxide	4.9	U
72-43-5	Methoxychlor	49	U
12674-11-2	Aroclor 1016	94	U
11104-28-2	Aroclor 1221	190	U
11141-16-5	Aroclor 1232	94	U
53469-21-9	Aroclor 1242	94	U
12672-29-6	Aroclor 1248	94	U
11097-69-1	Aroclor 1254	94	U
11096-82-5	Aroclor 1260	94	U
8001-35-2	Toxaphene	490	U

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK18

Matrix: (soil/water) SOLID Lab Sample ID:C7L180269 006
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 30 / g Date Received: 12/18/07
Work Order: KED231AC Date Extracted:12/20/07
Dilution factor: 1 Date Analyzed: 01/08/08
Moisture %:64

QC Batch: 7354026

Client Sample Id: YBKG-SD06-1207

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
309-00-2	Aldrin	4.7	U
319-84-6	alpha-BHC	4.7	U
319-85-7	beta-BHC	4.7	U
319-86-8	delta-BHC	4.7	U
58-89-9	gamma-BHC (Lindane)	4.7	U
5103-71-9	alpha-Chlordane	4.7	U
5103-74-2	gamma-Chlordane	4.7	U
72-54-8	4,4'-DDD	9.2	U
72-55-9	4,4'-DDE	9.2	U
50-29-3	4,4'-DDT	9.2	U
60-57-1	Dieldrin	9.2	U
959-98-8	Endosulfan I	4.7	U
33213-65-9	Endosulfan II	9.2	U
1031-07-8	Endosulfan sulfate	9.2	U
72-20-8	Endrin	9.2	U
7421-93-4	Endrin aldehyde	9.2	U
53494-70-5	Endrin ketone	9.2	U
76-44-8	Heptachlor	4.7	U
1024-57-3	Heptachlor epoxide	4.7	U
72-43-5	Methoxychlor	47	U
12674-11-2	Aroclor 1016	92	U
11104-28-2	Aroclor 1221	190	U
11141-16-5	Aroclor 1232	92	U
53469-21-9	Aroclor 1242	92	U
12672-29-6	Aroclor 1248	92	U
11097-69-1	Aroclor 1254	92	U
11096-82-5	Aroclor 1260	92	U
8001-35-2	Toxaphene	470	U

FORM I

TestAmerica Burlington

Client Sample ID: YS22-SD04-1207

HPLC

Lot-Sample #...: G7L140233-001 Work Order #...: KD65H1AD Matrix.....: SOLID
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/24/07 Analysis Date..: 12/29/07
Prep Batch #...: 7358114
Dilution Factor: 0.99
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	97	(81 - 127)

TestAmerica Burlington

Client Sample ID: YS22-SD05-1207

HPLC

Lot-Sample #...: G7L140233-002 Work Order #...: KD65M1AD Matrix.....: SOLID
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/24/07 Analysis Date..: 12/29/07
Prep Batch #...: 7358114
Dilution Factor: 0.98
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.24	mg/kg
2,4-Dinitrotoluene	ND	0.24	mg/kg
2,6-Dinitrotoluene	ND	0.24	mg/kg
HMX	ND	0.24	mg/kg
Nitrobenzene	ND	0.24	mg/kg
Nitroglycerin	ND	0.49	mg/kg
4-Nitrotoluene	ND	0.49	mg/kg
2-Nitrotoluene	ND	0.24	mg/kg
3-Nitrotoluene	ND	0.24	mg/kg
PETN	ND	0.49	mg/kg
RDX	ND	0.24	mg/kg
Tetryl	ND	0.24	mg/kg
1,3,5-Trinitrobenzene	ND	0.24	mg/kg
2,4,6-Trinitrotoluene	ND	0.24	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.24	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.29	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	94	(81 - 127)

TestAmerica Burlington

Client Sample ID: YS22-SD06-1207

HPLC

Lot-Sample #...: G7L140233-003 Work Order #...: KD65N1AD Matrix.....: SOLID
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/24/07 Analysis Date..: 12/29/07
Prep Batch #...: 7358114
Dilution Factor: 0.97
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.24	mg/kg
2,4-Dinitrotoluene	ND	0.24	mg/kg
2,6-Dinitrotoluene	ND	0.24	mg/kg
HMX	ND	0.24	mg/kg
Nitrobenzene	ND	0.24	mg/kg
Nitroglycerin	ND	0.48	mg/kg
4-Nitrotoluene	ND	0.48	mg/kg
2-Nitrotoluene	ND	0.24	mg/kg
3-Nitrotoluene	ND	0.24	mg/kg
PETN	ND	0.48	mg/kg
RDX	ND	0.24	mg/kg
Tetryl	ND	0.24	mg/kg
1,3,5-Trinitrobenzene	ND	0.24	mg/kg
2,4,6-Trinitrotoluene	ND	0.24	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.24	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.29	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(81 - 127)

TestAmerica Burlington

Client Sample ID: YS04-SD02-1207

HPLC

Lot-Sample #...: G7L140233-004 **Work Order #...:** KEAJ61AD **Matrix.....:** SOLID
Date Sampled...: 12/13/07 **Date Received..:** 12/15/07
Prep Date.....: 12/24/07 **Analysis Date..:** 12/29/07
Prep Batch #...: 7358114
Dilution Factor: 1.01
% Moisture.....: **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	96	(81 - 127)

TestAmerica Burlington

Client Sample ID: YS08-SD04-1207

HPLC

Lot-Sample #...: G7L140233-005 Work Order #...: KEAJ81AD Matrix.....: SOLID
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/24/07 Analysis Date..: 12/29/07
Prep Batch #...: 7358114
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	96	(81 - 127)

TestAmerica Burlington

Client Sample ID: YS08-SD03-1207

HPLC

Lot-Sample #...: G7L140233-006 **Work Order #...:** KEAKA1AD **Matrix.....:** SOLID
Date Sampled...: 12/13/07 **Date Received..:** 12/15/07
Prep Date.....: 12/24/07 **Analysis Date..:** 12/30/07
Prep Batch #...: 7358114
Dilution Factor: 1.01
% Moisture.....: **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	96	(81 - 127)

TestAmerica Burlington

Client Sample ID: YS08-SD02-1207

HPLC

Lot-Sample #...: G7L140233-007 Work Order #...: KEAKE1AD Matrix.....: SOLID
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/24/07 Analysis Date..: 12/30/07
Prep Batch #...: 7358114
Dilution Factor: 1.01
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	97	(81 - 127)

TestAmerica Burlington

Client Sample ID: YSA14-SD05-1207

HPLC

Lot-Sample #...: G7L140233-008 Work Order #...: KEEDJ1AD Matrix.....: SOLID
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/24/07 Analysis Date..: 12/30/07
Prep Batch #...: 7358114
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	95	(81 - 127)

TestAmerica Burlington

Client Sample ID: YSA14-SD02-1207

HPLC

Lot-Sample #...: G7L140233-009 Work Order #...: KEEDN1AD Matrix.....: SOLID
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/24/07 Analysis Date..: 12/30/07
Prep Batch #...: 7358114
Dilution Factor: 0.99
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	96	(81 - 127)

TestAmerica Burlington

Client Sample ID: YSA14-SD03-1207

HPLC

Lot-Sample #...: G7L140233-010 **Work Order #...:** KEEDP1AD **Matrix.....:** SOLID
Date Sampled...: 12/14/07 **Date Received..:** 12/18/07
Prep Date.....: 12/24/07 **Analysis Date..:** 12/30/07
Prep Batch #...: 7358114
Dilution Factor: 1
% Moisture.....: **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	98	(81 - 127)

TestAmerica Burlington

Client Sample ID: YBKG-SD02-1207

HPLC

Lot-Sample #...: G7L140233-011 **Work Order #...:** KEEDR1AD **Matrix.....:** SOLID
Date Sampled...: 12/14/07 **Date Received..:** 12/18/07
Prep Date.....: 12/24/07 **Analysis Date..:** 12/30/07
Prep Batch #...: 7358114
Dilution Factor: 1.01
% Moisture.....: **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	96	(81 - 127)

TestAmerica Burlington

Client Sample ID: YBKG-SD03-1207

HPLC

Lot-Sample #...: G7L140233-012 Work Order #...: KEEDT1AD Matrix.....: SOLID
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/24/07 Analysis Date..: 12/30/07
Prep Batch #...: 7358114
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	97	(81 - 127)

TestAmerica Burlington

Client Sample ID: YBKG-SD06-1207

HPLC

Lot-Sample #...: G7L140233-013	**Work Order #...:** KEEDV1AD	**Matrix.....:** SOLID
Date Sampled...: 12/14/07	**Date Received..:** 12/18/07	
Prep Date.....: 12/24/07	**Analysis Date..:** 12/30/07	
Prep Batch #...: 7358114		
Dilution Factor: 1		
% Moisture.....:	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
HMX	ND	0.25	mg/kg
Nitrobenzene	ND	0.25	mg/kg
Nitroglycerin	ND	0.50	mg/kg
4-Nitrotoluene	ND	0.50	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg
PETN	ND	0.50	mg/kg
RDX	ND	0.25	mg/kg
Tetryl	ND	0.25	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
3,5-Dinitroaniline	ND	1.3	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.30	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	93	(81 - 127)

TestAmerica Burlington

Client Sample ID: YS22-SD04-1207

HPLC

Lot-Sample #...:	G7L140233-001	Work Order #...:	KD65H1AC	Matrix.....:	SOLID
Date Sampled...:	12/12/07	Date Received..:	12/14/07		
Prep Date.....:	12/21/07	Analysis Date..:	01/03/08		
Prep Batch #...:	7355460				
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND UL MDL	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YS22-SD05-1207

HPLC

Lot-Sample #...:	G7L140233-002	Work Order #...:	KD65M1AC	Matrix.....:	SOLID
Date Sampled...:	12/12/07	Date Received..:	12/14/07		
Prep Date.....:	12/21/07	Analysis Date..:	01/03/08		
Prep Batch #...:	7355460				
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YS22-SD06-1207

HPLC

Lot-Sample #...: G7L140233-003 Work Order #...: KD65N1AC Matrix.....: SOLID
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/21/07 Analysis Date..: 01/03/08
Prep Batch #...: 7355460
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YS04-SD02-1207

HPLC

Lot-Sample #...: G7L140233-004 Work Order #...: KEAJ61AC Matrix.....: SOLID
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/21/07 Analysis Date..: 01/03/08
Prep Batch #...: 7355460
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YS08-SD04-1207

HPLC

Lot-Sample #...: G7L140233-005 Work Order #...: KEAJ81AC Matrix.....: SOLID
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/21/07 Analysis Date..: 01/03/08
Prep Batch #...: 7355460
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YS08-SD03-1207

HPLC

Lot-Sample #...: G7L140233-006 Work Order #...: KEAKA1AC Matrix.....: SOLID
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/21/07 Analysis Date..: 01/03/08
Prep Batch #...: 7355460
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YS08-SD02-1207

HPLC

Lot-Sample #...: G7L140233-007 Work Order #...: KEAKE1AC Matrix.....: SOLID
Date Sampled...: 12/13/07 Date Received..: 12/15/07
Prep Date.....: 12/21/07 Analysis Date..: 01/03/08
Prep Batch #...: 7355460
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YSA14-SD05-1207

HPLC

Lot-Sample #...:	G7L140233-008	Work Order #...:	KEEDJ1AC	Matrix.....:	SOLID
Date Sampled...:	12/14/07	Date Received..:	12/18/07		
Prep Date.....:	12/21/07	Analysis Date..:	01/03/08		
Prep Batch #...:	7355460				
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YSA14-SD02-1207

HPLC

Lot-Sample #...: G7L140233-009 Work Order #...: KEEDN1AC Matrix.....: SOLID
Date Sampled...: 12/14/07 Date Received..: 12/18/07
Prep Date.....: 12/21/07 Analysis Date..: 01/03/08
Prep Batch #...: 7355460
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YSA14-SD03-1207

HPLC

Lot-Sample #...:	G7L140233-010	**Work Order #...:**	KEEDP1AC	**Matrix.....:**	SOLID
Date Sampled...:	12/14/07	**Date Received..:**	12/18/07		
Prep Date.....:	12/21/07	**Analysis Date..:**	01/03/08		
Prep Batch #...:	7355460				
Dilution Factor:	1				
% Moisture.....:		**Method.....:**	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YBKG-SD02-1207

HPLC

Lot-Sample #...:	G7L140233-011	Work Order #...:	KEEDR1AC	Matrix.....:	SOLID
Date Sampled...:	12/14/07	Date Received..:	12/18/07		
Prep Date.....:	12/21/07	Analysis Date..:	01/03/08		
Prep Batch #...:	7355460				
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YBKG-SD03-1207

HPLC

Lot-Sample #...:	G7L140233-012	Work Order #...:	KEEDT1AC	Matrix.....:	SOLID
Date Sampled...:	12/14/07	Date Received..:	12/18/07		
Prep Date.....:	12/21/07	Analysis Date..:	01/03/08		
Prep Batch #...:	7355460				
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica Burlington

Client Sample ID: YBKG-SD06-1207

HPLC

Lot-Sample #...:	G7L140233-013	**Work Order #...:**	KEEDV1AC	**Matrix.....:**	SOLID
Date Sampled...:	12/14/07	**Date Received..:**	12/18/07		
Prep Date.....:	12/21/07	**Analysis Date..:**	01/03/08		
Prep Batch #...:	7355460				
Dilution Factor:	1				
% Moisture.....:		**Method.....:**	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	0.25	mg/kg

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

January 25, 2008

Ms. Stacy Davenport
CH2M Hill
15010 Conference Center Drive
Suite 200
Chantilly, VA 20151

Re: Laboratory Project No. 27000
Case: 27000; SDG: YORK18

Dear Ms. Davenport:

Enclosed are the analytical results for the samples that were received by TestAmerica Burlington on December 13th, 14th and 15th, 2007. Laboratory identification numbers were assigned, and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 12/13/07 ETR No: 123395		
735181	YS22-SD04-1207	12/12/07	SEDIMENT
735182	YS22-SD05-1207	12/12/07	SEDIMENT
735183	YS22-SD06-1207	12/12/07	SEDIMENT
	Received: 12/14/07 ETR No: 123423		
735387	YS08-SD04-1207	12/13/07	SEDIMENT
735388	YS08-SD03-1207	12/13/07	SEDIMENT
735389	YS08-SD02-1207	12/13/07	SEDIMENT
735417	YS04-SD02-1207	12/13/07	SEDIMENT
	Received: 12/15/07 ETR No: 123454		
735665	YSA14-SD05-1207	12/14/07	SEDIMENT
735666	YSA14-SD02-1207	12/14/07	SEDIMENT
735667	YSA14-SD03-1207	12/14/07	SEDIMENT
735668	YBKG-SD02-1207	12/14/07	SEDIMENT
735669	YBKG-SD03-1207	12/14/07	SEDIMENT
735670	YBKG-SD06-1207	12/14/07	SEDIMENT

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

30 Community Drive, Suite 11 South Burlington, VT 05403 **tel** 802.660.1990 **fax** 802.660.1919 **www.testamericainc.com**

The samples in this delivery group were received by TAL Burlington. The containers provided for nitroaromatic and nitroguanadine analyses were forwarded to TAL West Sacramento. Any containers provided for Pesticide/PCB analyses were forwarded to TAL Pittsburgh. Analytical data for those fractions is filed at the end of this submittal in sections titled Subcontract Data.

The samples in this delivery group were analyzed for Acid Volatile Sulfides and Simultaneously Extracted Metals (AVS/SEM). A serial dilution performed on sample YS22-SD04-1207 exhibited elevated percent differences for cadmium, nickel and lead.

The total metals matrix spike performed on sample YBKG-SD06-1207 yielded low recovery of cyanide. The post spike recoveries were acceptable, however the serial dilution percent difference was elevated for aluminum, barium, cobalt, chromium, iron, magnesium, manganese, sodium, potassium and vanadium.

The original TOC analyses of the samples in this delivery group occurred within holding time on 12/19/07 but were associated with a method blank that yielded the presence of carbon at a concentration above reporting limit. The samples were re-analyzed outside of holding time on 12/31/07 and 01/02/08 yielding acceptable blank results. The analytical results in the samples compared well between all analyses, therefore the original results within holding time have been formally reported in this case submittal.

Due to the calibration range of the Total Organic Carbon (TOC) analysis and the constraints associated with the establishment of a low concentration calibration point, there is imprecision in the quantitation of results at or near the reporting limit when using a linear regression with all of the calibration points. Therefore, the laboratory used a direct proportion between zero and the relative response of the low calibration standard in deriving results when the response for any one of the determinations for a particular sample was less than that of the low calibration standard.

Any reference within this report to Severn Trent Laboratories, Inc. or STL, should be understood to refer to TestAmerica Laboratories, Inc. (formerly known as Severn Trent Laboratories, Inc.) The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

If there are any questions regarding this submittal, please contact me at 802 660-1990.

Sincerely,

Jim Madison
Project Manager

Enclosure

GPL LABORATORIES, LLLP

Burlington

7210A Corporate Court
Frederick, MD 21703
(301) 694-5310
Fax (301) 620-0731

Contract #/Billing Reference: CTO 195

1 of 1 Pgs.

Project: CTO 195 NAS Yorktown
Client: CH2M Hill
Send Results To: Chelsea Bennett
Address: 5700 Cleveland St Ste 101
Virginia Beach VA 23462
Phone: 757 671 8311

Turnaround Time: Per Contract

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Explo/Petn/Nitroglycerin/Nitrocellulose 3.5 DVA 1L	Pest/PCB 1L	250mL Total Metals	250mL Dissolved Metal	250mL Cyanide	Total Pb, Cu, Zn 16oz	Ag/Sem Metal, Cyanide 16oz	Pest PCB 8oz	Explo/PETN/3.5-DNA Nitroglycerin/Nitrocellulose 4oz			Lab Cooler No.	CLIENT COMMENTS
# of Containers					8	8	4	4	4	3	3	3					
Container Type					1L	1L	250mL	250mL	250mL	16oz	8oz	4oz					
2-SW04-1207	12/12/07	1210	SW	OSK	2	2	1	1	1								
2-SD04-1207	12/12/07	1220	SED	OSK						1	1	1					
22-SW05-1207	12/12/07	1115	SW	OSK	2	2	1	1	1								
22-SD05-1207	12/12/07	1125	SED	OSK						1	1	1					
22-SW06-1207	12/12/07	1030	SW	OSK	2	2	1	1	1								
22-SD06-1207	12/12/07	1040	SED	OSK						1	1	1					
22-EA01-121207	12/12/07	1600	EB	OSK	2	2	1	1	1								Equipment blank
																	#3 coolers

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	12/12/07 1830			Jack L Martin	12/13/07 1045

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
					See attached sheet for tracking numbers

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:
			COPY - ORIGINAL ON FILE COC # YORK 17 ETR # 123391	4.3, 4.3, 2.6, 4.5, 4.0

G.P. W.O. _____

Burlington CTO-195

GPL LABORATORIES, LLLP

7210A Corporate Court
Frederick, MD 21703
(301) 694-5310
Fax (301) 620-0731

Contract #/Billing Reference: CTO-195

of Pgs.

Project: NNS Yorktown (CTO-195)
Client: CH2M Hill
Send Results To: Chelsea Bennet
Address: 5700 Cleveland St, Suite 101
Virginia Beach, VA 23462
Phone: 757-671-6205

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Explo, PETN, 3,5-DNA	Pesticides + PCBs	Total Metals	Dissolved Metals	Cyanide	Explo, PETN, 3,5DNA, Nitroglycerin, Nitroguanidine	Metals, Cyanide, Pesticides, PCBs	TCL, Grain size, pH, AVS SEM	Lab Cooler No.	CLIENT COMMENTS
Turnaround Time														
# of Containers														
Container Type					1-L Amber	1-L Amber	250mL Poly	250mL Poly	250mL Poly	4oz jar	8oz jar	16oz jar		
Preservative Used					—	—	HNO_3	HNO_3	NaOH		—			
YS04-SW02-1207	12/13/07	1200	SW	DL	2	2	1	1	1					
YS04-SD02-1207	12/13/07	1210	SD	DL						1	1	1		
YS08-SW04-1207	12/13/07	1305	SW	DL	2	2	1	1	1					
YS08-SD04-1207	12/13/07	1315	SD	DL						1	1	1		
YS08-SW03-1207	12/13/07	1410	SW	DL	2	2	1	1	1					
YS08-SD03-1207	12/13/07	1420	SD	DL						1	1	1		
YS08-SW02-1207	12/13/07	1455	SW	DL	2	2	1	1	1					
YS08-SD02-1207	12/13/07	1505	SD	DL						1	1	1		
YS08-EB01-121307	12/13/07	1545	EB	DL	2	2	1	1	1					
YS04-FB01-121307	12/13/07	1530	FB	DL	2	2	1	1	1					

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	12/13/07 1800			[signature]	12/14/07 0950

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
					See attached sheet for tracking numbers

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:
			COPY - ORIGINAL ON FILE SDG # YORK17 ETR # 123420	4.5, 3.1, 3.5, 2.3 °C

G.P. W.O. _____

163

[redacted] Burlington CTO-195

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M Hill	Project Manager: Laura Cook	Date:	Chain of Custody Number: 367981
Address: 5700 Cleveland ST, Suite 101	Telephone Number (Area Code)/Fax Number: 757-671-6208	Lab Number:	Page 1 of 2
City: Virginia Beach; State: VA; Zip Code: 23462	Site Contact: David Livingston; Lab Contact: Chelsea Bennet		
Project Name and Location (State): NWS Yorktown - Remedial Investigation	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: CTO-195			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Explo, PETN 3,5-DNA	Pest + PCBs	Total Metals	Dissolved Metals	Cyanide	Explo, PETN 3,5-DNA Nitroglycerin, Nitrocellulose	Metals, Cyanide, Pest, PCBs	TOC, Grain size, pH, AVS SEM					Special Instructions/ Conditions of Receipt
YSA14-SW05-1207	12/14/07	1030		X									2	2	1	1	1								
YSA14-SD05-1207	12/14/07	1040			X													1	1	1					
YSA14-SW02-1207	12/14/07	1110		X									2	2	1	1	1								
YSA14-SD02-1207	12/14/07	1120			X													1	1	1					
YSA14-SW03-1207	12/14/07	1215		X									2	2	1	1	1								
YSA14-SD03-1207	12/14/07	1225			X													1	1	1					
YBK6-SW02-1207	12/14/07	1245		X									2	2	1	1	1								
YBK6-SD02-1207	12/14/07	1255			X													1	1	1					
YSA14-EB01-121407	12/14/07	1400		X									2	2	1	1	1								
YSA14-FB01-121407	12/14/07	1140		X									2	2	1	1	1								

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify):

1. Relinquished By	Date 12/14/07	Time 1700	1. Received By	Date 12/15/07	Time 0905
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments: COPY - ORIGINAL ON FILE SDG # YORK17 ETR # 123448

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

[redacted]

Burlington

CTO - 195

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M Hill	Project Manager: Laura Cook	Date: 12/14/07	Chain of Custody Number: 367983
Address: 5700 Cleveland St, Suite 101	Telephone Number (Area Code)/Fax Number: 757-671-6208	Lab Number:	Page 2 of 2
City: Virginia Beach; State: VA; Zip Code: 23462	Site Contact: David Livingston	Lab Contact: Chelsea Barnett	
Project Name and Location (State): NWS Yorktown Remedial Investigation	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: CTO - 195			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): Explo, PETN, 3,5-DNA	Pest, PCB	Total Metals	Dissolved Metals	Cyanide	Explo, 3,5-DNA, PETN, N-Nitrosodiphenylamine	Metals, Cyanide, Pest, PCB	TOC, Grain Size, pH, AVS SEM					Special Instructions/ Conditions of Receipt
YBKG-SW03-1207	12/14/07	1310		X									2	2	1	1	1								
YBKG-SD03-1207	12/14/07	1320			X													1	1	2					
YBKG-SW06-1207	12/14/07	1335		X									2	2	1	1	1								
YBKG-SD06-1207	12/14/07	1345			X													1	1	2					

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other_____

QC Requirements (Specify):

1. Relinquished By	Date: 12/14/07	Time: 1700	1. Received By	Date: 12/15/07	Time: 0905
2. Relinquished By	Date:	Time:	2. Received By	Date:	Time:
3. Relinquished By	Date:	Time:	3. Received By	Date:	Time:

COPY - ORIGINAL ON FILE

SDG # YORK17 ETR # 1231146

Comments: Ran out of 16oz jars for TOC, pH, Grain size, AVS SEM → used two 8oz jars for YBKG-SD03-1207 and YBKG-SD06-1207

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Case Narrative

TestAmerica West Sacramento Project Number G7L140233

SOLID, 8330 (Modified), Organic Compound
Sample(s): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
The matrix spike/matrix spike duplicate (MS/MSD) associated with this extraction batch has recoveries for Nitroguanidine at 74% and 76%, below the lower control limit of 79%. Acceptable laboratory control sample (LCS) data demonstrate that the analytical system is in control. This anomaly is most likely matrix related.

There were no other anomalies associated with this project.

Intercompany Chain of Custody

SDG/Job Reference **YORK18**
PO Reference 123395
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/09/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
YS22-SD04-1207	735181	SEDIMENT	12/12/2007	1220	X	X
YS22-SD05-1207	735182	SEDIMENT	12/12/2007	1125	X	X
YS22-SD06-1207	735183	SEDIMENT	12/12/2007	1040	X	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	12/13/7	1530	[illegible]	12/14/07	1110

Intercompany Chain of Custody

SDG/Job Reference YORK18
PO Reference 123423
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/10/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
YS04-SD02-1207	735417	SEDIMENT	12/13/2007	1210	X	X
YS08-SD04-1207	735387	SEDIMENT	12/13/2007	1315	X	X
YS08-SD03-1207	735388	SEDIMENT	12/13/2007	1420	X	X
YS08-SD02-1207	735389	SEDIMENT	12/13/2007	1505	X	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	12/14/07	1645	[illegible]	12-15-07	1000

Intercompany Chain of Custody

SDG/Job Reference YORK18
PO Reference 123454
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/14/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
x YSA14-SD05-1207	735665	SEDIMENT	12/14/2007	1040	X	X
1 YSA14-SD02-1207	735666	SEDIMENT	12/14/2007	1120	X	X
1 YSA14-SD03-1207	735667	SEDIMENT	12/14/2007	1225	X	X
2 YBKG-SD02-1207	735668	SEDIMENT	12/14/2007	1255	X	X
YBKG-SD03-1207	735669	SEDIMENT	12/14/2007	1320	X	X
YBKG-SD06-1207	735670	SEDIMENT	12/14/2007	1345	X	X

x labeled @ 1030
1 " " 1110
2 " 1215
1245
CW 12/18/07

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	12/17/7	1600	Cheng Hua	12/18/07	1340

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT TAL Burlington PM SA LOG # 49459 (49523)

LOT# (QUANTIMS ID) G7L140233 QUOTE# 77439 LOCATION W20A

		Initials	Date
DATE RECEIVED 12/14/10 (12/18/10) TIME RECEIVED 0930 (0930)		CV	12/14/10
DELIVERED BY	☑ FEDEX ☐ CA OVERNIGHT ☐ CLIENT ☐ AIRBORNE ☐ GOLDENSTATE ☐ DHL ☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS ☐ TAL COURIER ☐ VALLEY LOGISTICS ☐ MORGAN HILL COURIER ☐ OTHER		
CUSTODY SEAL STATUS	☑ INTACT ☐ BROKEN ☐ N/A		
CUSTODY SEAL #(S)	See 1		
SHIPPPING CONTAINER(S)	☑ TAL ☐ CLIENT ☐ N/A		
TEMPERTURE RECORD (IN °C)	IR 4 ☐ 5 ☑ ☐ OTHER		
COC #(S)	N/A		
TEMPERATURE BLANK	Observed: ✓ Corrected:		
SAMPLE TEMPERATURE	Observed: 3 / 1 / 2 Average: 2 Corrected Average: 2		
COLLECTOR'S NAME: See 1.7	☐ Verified from COC ☑ Not on COC		
pH MEASURED	☐ YES ☐ ANOMALY ☑ N/A		
LABELED BY			
LABELS CHECKED BY			
PEER REVIEW	☑ NA		
SHORT HOLD TEST NOTIFICATION	SAMPLE RECEIVING; WETCHEM ☑ N/A; VOA-ENCORES ☑ N/A		
☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL	☑ N/A		
☑ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES	☐ N/A		
☐ CLOUSEAU	☐ TEMPERATURE EXCEEDED (2 °C – 6 °C)*1 ☑ N/A		
☐ WET ICE	☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED		

Notes:

*1 Acceptable temperature range for State of Wisconsin samples is≤4°C.

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

QA-185 5/05 EM, Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT TAL - Burlington PM DA LOG # 49488

LOT# (QUANTIMS ID) ~~G7L50205~~ G7L140233 QUOTE# 77439 LOCATION W12A

		Initials	Date
DATE RECEIVED 12-15-07 TIME RECEIVED 930		CH	12-15-07
DELIVERED BY	☑ FEDEX ☐ CA OVERNIGHT ☐ CLIENT ☐ AIRBORNE ☐ GOLDENSTATE ☐ DHL ☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS ☐ TAL COURIER ☐ VALLEY LOGISTICS ☐ MORGAN HILL COURIER ☐ OTHER		
CUSTODY SEAL STATUS	☑ INTACT ☐ BROKEN ☐ N/A		
CUSTODY SEAL #(S)	seal		
SHIPPPING CONTAINER(S)	☑ TAL ☐ CLIENT ☐ N/A		
TEMPERTURE RECORD (IN °C)	IR 4 ☐ 5 ☑ ☐ OTHER		
COC #(S)			
TEMPERATURE BLANK	Observed: NA Corrected:		
SAMPLE TEMPERATURE	Observed: 1 2 3 Average: 2 Corrected Average: 2		
COLLECTOR'S NAME:	☐ Verified from COC ☑ Not on COC		
pH MEASURED	☐ YES ☐ ANOMALY ☑ N/A		
LABELED BY			
LABELS CHECKED BY			
PEER REVIEW	☑ NA		
SHORT HOLD TEST NOTIFICATION	SAMPLE RECEIVING		
	WETCHEM ☑ N/A		
	VOA-ENCORES ☑ N/A		
☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL	☑ N/A		
☑ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES	☐ N/A		
☐ CLOUSEAU	☐ TEMPERATURE EXCEEDED (2 °C – 6 °C)*1 ☑ N/A		
☐ WET ICE	☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED		

Notes:

*1 Acceptable temperature range for State of Wisconsin samples is≤4°C.

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

QA-185 5/05 EM, Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

MULTI COOLER RECEIPT CHECKLIST
TestAmerica West Sacramento

G7L140233

CLIENT: TAL - Burlington LOT# (QUANTIMS ID): ~~G7L140228~~ CV 12/18/07

	INITIALS	DATE
TEMPERTURE RECORD (IN °C) IR 4 ☐ 5 ☑ ☐ OTHER _____	CV	12/18/07

COOLER ID 1
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) Seal
COC #(S) _____
TEMPERATURE BLANK: OBSERVED: _____ CORRECTED: _____
SAMPLE TEMPERATURE:
OBSERVED: 3 4 3 AVERAGE: 3 CORRECTED: 3
SAMPLES / TESTS (IF NCM REQUIRED): _____

COOLER ID 2
CUSTODY SEAL STATUS ☐ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) Seal
COC #(S) _____
TEMPERATURE BLANK: OBSERVED: _____ CORRECTED: _____
SAMPLE TEMPERATURE:
OBSERVED: 2 1 4 AVERAGE: 2 CORRECTED: 2
SAMPLES / TESTS (IF NCM REQUIRED): _____

COOLER ID _____
CUSTODY SEAL STATUS ☐ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) _____
COC #(S) _____
TEMPERATURE BLANK: OBSERVED: _____ CORRECTED: _____
SAMPLE TEMPERATURE:
OBSERVED: ___ ___ ___ AVERAGE: _____ CORRECTED: _____
SAMPLES / TESTS (IF NCM REQUIRED): _____

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

QA-185 1/06 DAW, Page 2

TestAmerica West Sacramento

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Bottle Lot Inventory

Lot ID: G7L140233

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOA*																				
VOAh*																				
AGB																				
AGBs																				
250AGB																				
250AGBs																				
250AGBn																				
500AGB																				
____AGJ																				
500AGJ																				
250AGJ																				
125AGJ																				
____CGJ																				
500CGJ																				
250CGJ																				
125CGJ	/	/	/	/	/	/	/	/	/	/	/	/	/							
PJ																				
PJn																				
500PJ																				
500PJn																				
500PJna																				
500PJzn/na																				
250PJ																				
250PJn																				
250PJna																				
250PJzn/na																				
Acetate Tube																				
_____"CT																				
Encore																				
Folder/filter																				
PUF																				
Petri/Filter																				
XAD Trap																				
Ziploc																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

h = hydrochloric acid s = sulfuric acid na = sodium hydroxide n = nitric acid zn = zinc acetate

Number of VOAs with air bubbles present / total number of VOA's

QA-185 5/05 EM

Page 3

LEAVE NO SPACES BLANK. USE "NA" IF NOT APPLICABLE.

CASE NARRATIVE
TestAmerica Burlington

SDG# YORK18

Sample Receiving:
TestAmerica Pittsburgh received samples on December 14, 15, and 18, 2007. The coolers were received within the proper temperature range.

If project specific QC was not required for samples contained in this report and batch QC was completed on these samples, anomalous results will be discussed below.

Pesticides/PCBs:
The matrix spike and matrix spike duplicate recovered outside of the control limits for gamma-BHC.

General Chemistry:
The total solids were performed at the TestAmerica Savannah laboratory and sent to TestAmerica Pittsburgh for dry weight conversion.

Intercompany Chain of Custody

SDG/Job Reference YORK18
PO Reference 123395
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/09/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YS22-SD04-1207	735181	SEDIMENT	12/12/2007	1220	X
YS22-SD05-1207	735182	SEDIMENT	12/12/2007	1125	X
YS22-SD06-1207	735183	SEDIMENT	12/12/2007	1040	X

Relinquished By: [signature] Date: 12/13/7 Time: 1530 Received By: [signature] Date: 12/14/7 Time: 1030

Cooler Receipt Form

TestAmerica Pittsburgh

Client: STL Burlington Project: _____ Quote: _____

Cooler Rec'd & Opened for Temp. Check on: 12/14/07

Coolers Opened and Unpacked on: 12/14/07 By: _____ (Signature)

TestAmerica Pittsburgh Lot Number: C7L140400

		Yes	No
1.	Were custody seals on the outside of the cooler?	✓	
	If YES, how many and where? Quantity __ Location _____		
	Were signatures and date correct?	✓	
2.	Were custody papers included inside the cooler?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did you sign the custody papers in the appropriate place?	✓	
5.	Was shippers packing slip attached to this form?	✓	
6.	Were packing materials used?	✓	
	If YES, what type? Bubble Pak		
7.	Were the samples chilled? (Record temperatures on reverse side.)	✓	
8.	Were the samples appropriately preserved?	✓	
9.	Were all bottles sealed in separate plastic bags?	✓	
10.	Did all bottles arrive in good condition (unbroken)?	✓	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓	
12.	Did all bottle labels and/or tags agree with custody papers?	✓	
13.	Were correct bottles used for tests indicated?	✓	
14.	Were all VOA vials checked for the presence of air bubbles?	✓	
15.	Was a sufficient amount of sample sent in each bottle?	✓	

16. Samples received by: (FEDEX) UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies: _____

Level 2 Review _____

Was contacted on _____ by _____ to resolve discrepancies.

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
B'W	4.4	H9 - 2

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

Intercompany Chain of Custody

SDG/Job Reference **YORK18**
PO Reference 123423
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/10/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YS04-SD02-1207	735417	SEDIMENT	12/13/2007	1210	X
YS08-SD04-1207	735387	SEDIMENT	12/13/2007	1315	X
YS08-SD03-1207	735388	SEDIMENT	12/13/2007	1420	X
YS08-SD02-1207	735389	SEDIMENT	12/13/2007	1505	X

Relinquished By: [illegible] Date: 12/14/07 Time: 1600
Received By: [illegible] Date: 12/15/07 Time: 1025

Cooler Receipt Form

TestAmerica Pittsburgh

Client: T/A Burlington Project: _____ Quote: 77452

Cooler Rec'd & Opened for Temp. Check on: 12-15-07

Coolers Opened and Unpacked on: 12-15-07 By: [signature]

(Signature)

TestAmerica Pittsburgh Lot Number: C7L1:0135

		Yes	No
1.	Were custody seals on the outside of the cooler?	✓	
	If YES, how many and where? Quantity 1 Location Front		
	Were signatures and date correct?	✓	
2.	Were custody papers included inside the cooler?	✓	
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓	
4.	Did you sign the custody papers in the appropriate place?	✓	
5.	Was shippers packing slip attached to this form?	✓	
6.	Were packing materials used?	✓	
	If YES, what type? Bubble Bag		
7.	Were the samples chilled? (Record temperatures on reverse side.)	✓	
8.	Were the samples appropriately preserved?	N/A	
9.	Were all bottles sealed in separate plastic bags?	✓	
10.	Did all bottles arrive in good condition (unbroken)?	✓	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓	
12.	Did all bottle labels and/or tags agree with custody papers?	✓	
13.	Were correct bottles used for tests indicated?	✓	
14.	Were all VOA vials checked for the presence of air bubbles?	N/A	
15.	Was a sufficient amount of sample sent in each bottle?	✓	

16. Samples received by: FEDEX UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies: _____

Level 2 Review _____

Was contacted on _____ by _____ to resolve discrepancies.

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	3.8	1
2	4.1	5

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

YORK18

Intercompany Chain of Custody

SDG/Job Reference YORK18
PO Reference 123454
Project ID SUBR7
Project Name Yorktown NWS
Due Date 01/14/2008

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	Pesticides/PCB by OLM04.3
YSA14-SD05-1207	735665	SEDIMENT	12/14/2007	1040	X
YSA14-SD02-1207	735666	SEDIMENT	12/14/2007	1120	X
YSA14-SD03-1207	735667	SEDIMENT	12/14/2007	1225	X
YBKG-SD02-1207	735668	SEDIMENT	12/14/2007	1255	X
YBKG-SD03-1207	735669	SEDIMENT	12/14/2007	1320	X
YBKG-SD06-1207	735670	SEDIMENT	12/14/2007	1345	X

Relinquished By: [illegible] Date: 12/17/7 Time: 1520
Received By: Patrick R Bank Date: 12/18/07 Time: ~~0940~~ 1026

Cooler Receipt Form

TestAmerica Pittsburgh

Client: TestAmerica - Burlington Project: _____ Quote: 77432

Cooler Rec'd & Opened for Temp. Check on: 12/18/07

Coolers Opened and Unpacked on: 12/18/07 By: PRF (Signature)

TestAmerica Pittsburgh Lot Number: CTL180269

		Yes	No
1.	Were custody seals on the outside of the cooler?	/	
	If YES, how many and where? Quantity 1 Location front		
	Were signatures and date correct?	/	
2.	Were custody papers included inside the cooler?	/	
3.	Were custody papers properly filled out (ink, signed, match labels)?	/	
4.	Did you sign the custody papers in the appropriate place?	/	
5.	Was shippers packing slip attached to this form?	/	
6.	Were packing materials used?		
	If YES, what type? Bubble Wrap		
7.	Were the samples chilled? (Record temperatures on reverse side.)	/	
8.	Were the samples appropriately preserved?	N/A	
9.	Were all bottles sealed in separate plastic bags?		/
10.	Did all bottles arrive in good condition (unbroken)?	/	
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	/	
12.	Did all bottle labels and/or tags agree with custody papers?	/	
13.	Were correct bottles used for tests indicated?		
14.	Were all VOA vials checked for the presence of air bubbles?	N/A	/
15.	Was a sufficient amount of sample sent in each bottle?		

16. Samples received by: FEDEX UPS CLIENT DROP-OFF OTHER AIRBORNE

Explain any discrepancies: _____

Level 2 Review _____

Was contacted on _____ by _____ to resolve discrepancies.

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	3.0°	1
2	2.6°	6

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 12/12-14/07
Received Date: 12/13-15/07
Analysis Dates: 12/14-23/07

Cooler Temp: 0.3-3.6°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications required for the initial calibrations. The continuing calibration required qualifications due to high %Ds, see attached Form VIIs.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method blanks. The QC blanks associated with this SDG were: YS08-TB01-121307 (no positive results) and YSA14-TB01-121407 (no positive results)- trip blanks; YS08-EB01-121307 (no positive results) and YSA14-EB01-121407 (chloroform 1.9J ug/L—no qualifications required)- equipment blank; YSA14-FB01-121407 (no positive results) - field blanks.

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Maschkoff **Date:** 2/18/08

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: STL SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK18

Lab File ID: MB183 BFB Injection Date: 12/14/07

Instrument ID: MSM5972 BFB Injection Time: 2140

GC Column: DB-624 20M ID: 0.18 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	24.1	
75	30.0 - 66.0% of mass 95	49.6	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	7.7	
173	Less than 2.0% of mass 174	0.0	(0.0)1
174	50.0 - 120.0% of mass 95	74.4	
175	4.0 - 9.0% of mass 174	3.8	(5.1)1
176	93.0 - 101.0% of mass 174	70.6	(94.9)1
177	5.0 - 9.0% of mass 176	4.7	(6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCVIS;4.3-05	CCVIS;4.3-050	MQ080	12/14/07	2205
02	VLCS01	LCS 680-93670/	MQ081	12/14/07	2236
03	VBLK01	MB 680-93670/2	MQ082	12/14/07	2258
04	YS22-SD04-12	680-32714-A-2	M00696	12/15/07	0354
05	YS22-SD05-12	680-32714-A-4	M00697	12/15/07	0417
06	YS22-SD06-12	680-32714-A-6	M00698	12/15/07	0439
07	YS04-SD02-12	680-32771-B-2	M00699	12/15/07	0502
08	YS08-SD04-12	680-32771-B-4	M00700	12/15/07	0524
09	YS08-SD03-12	680-32771-B-6	M00701	12/15/07	0547
10	YS08-SD02-12	680-32771-B-8	M00702	12/15/07	0610
11					
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7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK18

Instrument ID: MSM5972 Calibration Date: 12/14/07 Time: 2205

Lab File ID: MQ080 Init. Calib. Date(s): 12/08/07 12/08/07

EPA Sample No.(VSTD050##): CCVIS;4.3-050 Init. Calib. Times: 1906 2036

Heated Purge: (Y/N) N

GC Column: DB-624 ID: 0.18 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	3.623	3.346		-7.6	25.0
Chloromethane	4.357	4.392		0.8	
Vinyl Chloride	3.351	3.263	0.100	-2.6	25.0
Bromomethane	0.681	0.547	0.100	-19.7	25.0
Chloroethane	1.956	1.900		-2.9	
Trichlorofluoromethane	3.350	2.975		-11.2	
1,1-Dichloroethene	1.987	1.966	0.100	-1.1	25.0
Freon 113	4.104	3.977		-3.1	
Acetone	1.732	1.678		-3.1	
Carbon Disulfide	8.422	8.265		-1.9	
Methyl Acetate	1.925	1.916		-0.5	
Methylene Chloride	2.476	2.556		3.2	
trans-1,2-Dichloroethene	2.357	2.404		2.0	
Methyl Tert-Butyl Ether	5.715	6.127		7.2	
1,1-Dichloroethane	4.718	4.749	0.200	0.7	25.0
cis-1,2-Dichloroethene	2.450	2.551		4.1	
1,2-Dichloroethene (total)	4.806	4.955		3.1	
2-Butanone	1.895	1.934		2.1	
Chloroform	4.322	4.414	0.200	2.1	25.0
1,1,1-Trichloroethane	0.497	0.494	0.100	-0.6	25.0
Cyclohexane	0.711	0.747		5.1	25.0
Carbon Tetrachloride	0.338	0.323	0.100	-4.4	25.0
Benzene	1.517	1.648	0.500	8.6	25.0
1,2-Dichloroethane	3.390	3.337	0.100	-1.6	25.0
Trichloroethene	0.345	0.372	0.300	7.8	25.0

All other compounds must meet a minimum RRF of 0.010.

7B
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK18

Instrument ID: MSM5972 Calibration Date: 12/14/07 Time: 2205

Lab File ID: MQ080 Init. Calib. Date(s): 12/08/07 12/08/07

EPA Sample No.(VSTD050##): CCVIS;4.3-050 Init. Calib. Times: 1906 2036

Heated Purge: (Y/N) N

GC Column: DB-624 ID: 0.18 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Methyl Cyclohexane	0.824	0.881		6.9	
1,2-Dichloropropane	0.508	0.548		7.9	
Bromodichloromethane	0.566	0.585	0.200	3.4	25.0
cis-1,3-Dichloropropene	0.794	0.855	0.200	7.7	25.0
4-Methyl-2-Pentanone	0.504	0.522		3.6	
Toluene	1.782	1.939	0.400	8.8	25.0
trans-1,3-Dichloropropene	0.690	0.733	0.100	6.2	25.0
1,1,2-Trichloroethane	0.343	0.377	0.100	9.9	25.0
Tetrachloroethene	0.256	0.267	0.200	4.3	25.0
2-Hexanone	0.460	0.487		5.9	
Dibromochloromethane	0.294	0.303	0.100	3.1	25.0
1,2-Dibromoethane	0.288	0.309		7.3	
Chlorobenzene	0.944	1.012	0.500	7.2	25.0
Ethylbenzene	0.534	0.555	0.100	3.9	25.0
Xylene (total)	0.625	0.656	0.300	5.0	25.0
Styrene	1.003	1.063	0.300	6.0	25.0
Bromoform	0.158	0.154	0.100	-2.5	25.0
Isopropylbenzene	1.685	1.739		3.2	
1,1,2,2-Tetrachloroethane	0.470	0.472	0.300	0.4	25.0
1,3-Dichlorobenzene	0.687	0.711	0.600	3.5	25.0
1,4-Dichlorobenzene	0.696	0.708	0.500	1.7	25.0
1,2-Dichlorobenzene	0.615	0.628	0.400	2.1	25.0
1,2-Dibromo-3-Chloropropane	0.224	0.065		-71.0	
1,2,4-Trichlorobenzene	0.355	0.369	0.200	3.9	25.0
1,2-Dichloroethane-d4	2.900	2.895		-0.2	
Toluene-d8	1.341	1.434		6.9	
4-Bromofluorobenzene	0.562	0.579	0.200	3.0	25.0

All other compounds must meet a minimum RRF of 0.010.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: STL SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK18

Lab File ID: MB195 BFB Injection Date: 12/23/07

Instrument ID: MSM5972 BFB Injection Time: 1827

GC Column: DB-624 20M ID: 0.18 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	22.6
75	30.0 - 66.0% of mass 95	46.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	71.4
175	4.0 - 9.0% of mass 174	5.5 (7.7)1
176	93.0 - 101.0% of mass 174	66.8 (93.5)1
177	5.0 - 9.0% of mass 176	4.1 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCVIS;4.3-05	CCVIS;4.3-050	MQ137	12/23/07	1904
02	VLCS03	LCS 680-95024/	MQ138	12/23/07	1935
03	VBLK03	MB 680-95024/8	MQ139	12/23/07	1958
04	YSA14-SD02-1	680-32816-A-4	M0855	12/23/07	2107
05					
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7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK18

Instrument ID: MSM5972 Calibration Date: 12/23/07 Time: 1904

Lab File ID: MQ137 Init. Calib. Date(s): 12/08/07 12/08/07

EPA Sample No.(VSTD050##): CCVIS;4.3-050 Init. Calib. Times: 1906 2036

Heated Purge: (Y/N) N

GC Column: DB-624 ID: 0.18 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	3.623	3.612		-0.3	25.0
Chloromethane	4.357	4.292		-1.5	
Vinyl Chloride	3.351	3.406	0.100	1.6	25.0
Bromomethane	0.681	0.703	0.100	3.2	25.0
Chloroethane	1.956	1.789		-8.5	
Trichlorofluoromethane	3.350	3.524		5.2	
1,1-Dichloroethene	1.987	2.142	0.100	7.8	25.0
Freon 113	4.104	4.518		10.1	
Acetone	1.732	1.948		12.5	
Carbon Disulfide	8.422	8.783		4.3	
Methyl Acetate	1.925	2.006		4.2	
Methylene Chloride	2.476	2.728		10.2	
trans-1,2-Dichloroethene	2.357	2.575		9.2	
Methyl Tert-Butyl Ether	5.715	6.670		16.7	
1,1-Dichloroethane	4.718	5.188	0.200	10.0	25.0
cis-1,2-Dichloroethene	2.450	2.703		10.3	
1,2-Dichloroethene (total)	4.806	5.278		9.8	
2-Butanone	1.895	2.116		11.7	
Chloroform	4.322	4.975	0.200	15.1	25.0
1,1,1-Trichloroethane	0.497	0.533	0.100	7.2	25.0
Cyclohexane	0.711	0.790		11.1	25.0
Carbon Tetrachloride	0.338	0.374	0.100	10.7	25.0
Benzene	1.517	1.680	0.500	10.7	25.0
1,2-Dichloroethane	3.390	3.902	0.100	15.1	25.0
Trichloroethene	0.345	0.310	0.300	-10.1	25.0

All other compounds must meet a minimum RRF of 0.010.

7B

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL SAVANNAH Contract:

Lab Code: SL Case No.: SAS No.: SDG No.: YORK18

Instrument ID: MSM5972 Calibration Date: 12/23/07 Time: 1904

Lab File ID: MQ137 Init. Calib. Date(s): 12/08/07 12/08/07

EPA Sample No.(VSTD050##): CCVIS;4.3-050 Init. Calib. Times: 1906 2036

Heated Purge: (Y/N) N

GC Column: DB-624 ID: 0.18 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Methyl Cyclohexane	0.824	0.994		20.6	
1,2-Dichloropropane	0.508	0.586		15.4	
Bromodichloromethane	0.566	0.635	0.200	12.2	25.0
cis-1,3-Dichloropropene	0.794	0.912	0.200	14.9	25.0
4-Methyl-2-Pentanone	0.504	0.509		1.0	
Toluene	1.782	1.811	0.400	1.6	25.0
trans-1,3-Dichloropropene	0.690	0.779	0.100	12.9	25.0
1,1,2-Trichloroethane	0.343	0.381	0.100	11.1	25.0
Tetrachloroethene	0.256	0.255	0.200	-0.4	25.0
2-Hexanone	0.460	0.473		2.8	
Dibromochloromethane	0.294	0.323	0.100	9.9	25.0
1,2-Dibromoethane	0.288	0.282		-2.1	
Chlorobenzene	0.944	0.930	0.500	-1.5	25.0
Ethylbenzene	0.534	0.517	0.100	-3.2	25.0
Xylene (total)	0.625	0.607	0.300	-2.9	25.0
Styrene	1.003	0.988	0.300	-1.5	25.0
Bromoform	0.158	0.155	0.100	-1.9	25.0
Isopropylbenzene	1.685	1.626		-3.5	
1,1,2,2-Tetrachloroethane	0.470	0.452	0.300	-3.8	25.0
1,3-Dichlorobenzene	0.687	0.664	0.600	-3.3	25.0
1,4-Dichlorobenzene	0.696	0.652	0.500	-6.3	25.0
1,2-Dichlorobenzene	0.615	0.592	0.400	-3.7	25.0
1,2-Dibromo-3-Chloropropane	0.224	0.065		-71.0	J/OLT
1,2,4-Trichlorobenzene	0.355	0.326	0.200	-8.2	25.0
1,2-Dichloroethane-d4	2.900	3.180		9.7	
Toluene-d8	1.341	1.383		3.1	
4-Bromofluorobenzene	0.562	0.551	0.200	-2.0	25.0

All other compounds must meet a minimum RRF of 0.010.

Initial Calibration Date: 12/8/2007

RRF and %RSD Calculations:

Compound Name: vinyl chloride
Lab Value: 3.495

Area of Compound	173050
Area of Internal STD	12377
Conc. of Internal STD	50
Conc. of Compound	200
Calculated RRF	3.495

Compound Name: chloromethane
Lab Value: 4.7

RRF of STD 1	4.658
RRF of STD 2	4.180
RRF of STD 3	4.151
RRF of STD 4	4.372
RRF of STD 5	4.426
Calculated % RSD	4.7

Continuing Calibration File ID: 12/14/2007

RRF and %D Calculations:

Compound Name: methylene chloride
Lab Value: 2.556

Area of Compound	35367
Area of Internal STD	13837
Conc. of Internal STD	50
Conc. of Compound	50
Calculated RRF	2.556

Compound Name: 2-butanone
Lab Value: 2.1

Average RRF	1.895
Calibration Check RRF	1.934
Calculated % D	-2.1

SAMPLE CALCULATION

Sample ID: YS22-SD04-1207
Standard ID: 12/14/2007
Compound: carbon disulfide
Concnetration: 13J ug/Kg

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound		11641	
Area of Internal STD		11034	
Conc. of Internal (ng)	250	250	
RRF of Compound		8.265	
Dilution Factor	1	1	
Weight of Sample	NA	6	
Volume of Sample	5	NA	
% Moisture	NA	0.403	
Aliquot of methol	NA	NA	
Concentration	#DIV/0!	13.2	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	2.826	1.867	0.661
Standard	2.805	1.867	0.666

CASE NARRATIVE
Volatiles Fraction (OLM04.3)
SDG: YORK18
STL Lab Reference No.: 680-32714, 680-32771, 680-32816
Project: Yorktown Sites, CTO 195

I. RECEIPT
No receipt or storage anomalies were noted.

II. HOLDING TIMES
A. Sample Preparation: All holding times were met.
B. Sample Analysis: All holding times were met.

III. METHODS
Preparation: OLM04.3_Vol
Cleanup: None
Analysis: OLM04.3_Vol

IV. PREPARATION
Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All initial and continuing calibration criteria were met for target compounds.

B. Blanks: No target compounds were detected in the method blanks.

C. Surrogates: All surrogates recovered within quality control (QC) limits.

D. Spikes: Laboratory control standards (LCS) were analyzed for quality assurance purposes and all target compounds recovered within quality control (QC) limits.

E. Samples: No dilutions were required for sample analysis.

F. Internal Standards: Internal standards for all samples were within quality control (QC) limits.

G. Notes: A laboratory storage blank was analyzed with these samples. The raw data for the laboratory storage blank is included in the data package at the end of the Raw Sample Data section.

CLP method OLM04.3 was utilized for this project, however our forms and raw data generated using the target software currently lists CLP 4.2 as the statement of work.

All tentatively identified compounds (TICs) in this sample delivery group are estimated values.

Data Completeness

The data package was received complete and intact. Resubmissions were required, samples weights were not properly recorded on the raw data, the laboratory was contacted and the changes were made to the data. Also, a new case narrative was submitted to discuss the matrix spike and matrix spike duplicate recoveries. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 12/12-14/07
Received Date: 12/13-15/07
Extraction Date: 12/20/07
Analysis Dates: 01/14/08

Cooler Temp: 0.3-3.6°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of DFTPP.

No qualifications required for the initial and continuing calibrations.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method blanks. The QC blanks associated with this SDG were: YS08-EB01-121307 (no positive results) and YSA14-EB01-121407 (no positive results)- equipment blank; YSA14-FB01-121407 (no positive results) - field blanks.

The associated method and QC blanks exhibited contamination for TICs. All B flagged TICs in the field samples are flagged B and crossed out in accordance with the Region III modifications to the National Functional Guidelines.

Surrogates

All criteria were met.

Laboratory Control Sample

An LCS was not submitted for this data package.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YSA14-SD03-1207—all criteria met.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer_____ **Date:** 3/7/08

Initial Calibration Date: 1/13/2008

RRF and %RSD Calculations:

Compound Name: phenol
Lab Value: 1.982

Area of Compound	1451106
Area of Internal STD	182987
Conc. of Internal STD	20
Conc. of Compound	80
Calculated RRF	1.983

Compound Name: benzo(g,h,I)perylene
Lab Value: 2.4

RRF of STD 1	1.343
RRF of STD 2	1.341
RRF of STD 3	1.363
RRF of STD 4	1.343
RRF of STD 5	1.419
Calculated % RSD	2.44

Continuing Calibration File ID: 1/14/2008

RRF and %D Calculations:

Compound Name: benzo(b)fluoranthene
Lab Value: 1.453

Area of Compound	1554761
Area of Internal STD	856126
Conc. of Internal STD	20
Conc. of Compound	25
Calculated RRF	1.453

Compound Name: 4-nitroaniline
Lab Value: 0.8

Average RRF	0.351
Calibration Check RRF	0.354
Calculated % D	-0.85

SAMPLE CALCULATION

Sample ID: YSA14-SD03-1207MS
Standard ID: 1/14/2008
Compound: phenol
Concnetration: 4800 ug/Kg

	Water (ug/L)	Soil (ug/Kg)
Area of Compound		855451
Area of Internal STD		184565
Conc. of Internal (ng)	20	20
RRF of Compound		1.834
Final Volume	1000	1000
Dilution Factor	1	1
GPC Factor	NA	2
Injection Volume	1	2
Weight of Sample	NA	30.29
Initial Volume of Sample	1000	NA
% Moisture	NA	0.352
Concentration	#DIV/0!	4740.61

	RT of Internal STD	RT of Compound	RRT
Sample	4.85	4.545	0.937
Standard	4.848	4.549	0.938

DataQual

From: <Ann.West@ch2m.com>
To: <Anita.Dodson@ch2m.com>; <Michael.Zamboni@ch2m.com>
Sent: Thursday, March 02, 2006 5:04 PM
Subject: Technical Holding Times

To the Navy CLEAN II and III internal and data validation subcontractors:

Concerning guidance in the Region III Modifications for technical holding times for non-aqueous samples to be analyzed for semivolatiles and pesticide/PCBs.

Per discussion on March 2, 2006, Mary Ellen Schultz, EPA Region III Quality Assurance Officer for Federal Projects, stated that the Region III data validation guidelines are outdated, and a new version is scheduled for publication at the end of the year. In that version, the technical requirements for sample holding times will be fourteen days. This practice is currently being used by internal Region III validators. In an effort to be consistent with current internal Region III validation practices, Mary Ellen Schultz recommends that validators should use professional judgment to extend the holding times to 14 days.

Therefore, CH2M HILL CLEAN II and III internal and subcontracted BOA validators should use fourteen days as the technical holding times for non-aqueous semivolatiles, pesticides, and PCBs until the new guidance is published.

CASE NARRATIVE
Fraction: SEMI VOLATILES By GC/MS (OLM04.3)
SDG: YORK18
STL Lab Reference No.: 680-32714, 680-32771 and 680-32816
Project: Yorktown Sites, CTO 195

I. RECEIPT
No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. HOLDING TIMES
A. Sample Preparation: All holding times were met.
B. Sample Analysis: All holding times were met.

III. METHODS
Preparation: CLP-OLM04.3
Cleanup: CLP-GPC 3640A
Analysis: CLP-OLM04.3

IV. PREPARATION
Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Surrogates: All acceptance criteria were met.

D. Samples: All acceptance criteria were met.

E. Internal Standards: All acceptance criteria were met

F. Spike: Sample 680-32816-6 (YSA14-SD03-1207) was the batch matrix spike / matrix spike duplicate, and all recoveries were within the established control limit.

Other: Regarding potential differences in values between Form 3s and raw data, please be advised of the following TA Savannah LIMS programming rules:

- Raw results are evaluated <u>without</u> a Lower Limit governor. (Therefore, all hits >0 are presented on raw data.)
- Reported results are evaluated <u>with</u> a Lower Limit governor. (Therefore, only hits >RL presented on LIMS Report/Form 1.)
- %Recovery is calculated using the <u>raw</u> result.
- %RPD is calculated using the <u>reported</u> result.

Due to programming rules, MS/MSD RPDs may be noted as NC, Not Calculated, from the reported result.

DataQual

From: "Page, Abbie" <Abbie.Page@testamericainc.com>
To: "DataQual" <dataqual@charter.net>
Cc: <Chelsea.Bennet@ch2m.com>
Sent: Friday, February 29, 2008 9:00 AM
Subject: RE: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Good Morning,

We will be reissuing the SVOC data packages with revised raw data today; however, the files will be too large for me to e-mail.

Please let me know if both of you require a CD. If sending directly to Laura, I'll need an address. We can ship today for your receipt Monday.

Thank you,
Abbie

From: Page, Abbie
Sent: Tuesday, February 26, 2008 5:54 PM
To: 'DataQual'
Cc: Chelsea.Bennet@ch2m.com
Subject: RE: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195
Importance: High

Hi Laura,

Allow me to offer some feedback directly from our department manager regarding the raw data sample weights:

CLP samples have two prep batches. 1st prep batch is the 3550 extraction of 30g to 10ml, the second batch is the GPC cleanup of 5ml to 0.5ml.

We use the container number from the second prep (GPC) when merging to LIMs to get the correct final results. As a result, target gets populated with the initial volume of 5 from the GPC batch , instead of 30 from the 3550 batch. When the raw data is printed, the initial volume has to be manually changed in target. It looks like the raw data did not get changed before printing.

I have requested that we make the appropriate, manual changes to the raw data for SVOC resubmission of YORK14, YORK16 & YORK18. I will also include a brief summary of the limitations discussed below (with regards to the MS/MSD forms) in the case narratives. Do you feel this will suffice as documentation and address the issues of concern?

Please advise - I'll be glad to follow up as thoroughly as possible to ensure you have what you need.

Regards,
Abbie

From: DataQual [mailto:dataqual@charter.net]
Sent: Sunday, February 24, 2008 4:08 PM

To: Page, Abbie
Cc: Chelsea.Bennet@ch2m.com
Subject: Re: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Dear Abbie,

When comparing the raw data, Form Is and Form IIIs for the MS/MSD pairs in question, the sample weight on the raw data and therefore the final concentration (ug/Kg) on the raw data, are incorrect.

For example in SDG# YORK18, sample YSA14-SD03-1207MS Form I (p.43) sample weight is 30.29g with a 2,4-dinitrotoluene result of 3500 ug/Kg and the raw data (p.343) states a 5g sample weight and a 2,4-dinitrotoluene result of 21000ug/Kg. Also, the Form I for the MS/MSDs do not list the positive results that are below the RL. The Form I and Form IIIs for the MS/MSD pair should reflect actual results used for calculating recoveries whether they are below the RL or not. Otherwise, the results presented on these forms do not appear to make sense. Please submit narratives for SDG#s YORK14, 16 and 18 addressing both the raw data errors and the LIMS programming limitations that cause the MS/MSD form Is and form IIIs to be misleading.

If there are any question please let me know.

Thank you,
Laura

> ----- Original Message -----
> **From:** Page, Abbie
> **To:** DataQual
> **Cc:** Chelsea.Bennet@ch2m.com
> **Sent:** Friday, February 22, 2008 2:37 PM
> **Subject:** RE: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195
>
> Regarding our LIMS calculation set-up, I'm hopeful this might clarify a bit further:
>
> Raw results are evaluated without a Lower Limit governor. (Therefore, all hits >0 are presented on raw data.)
> Reported results are evaluated with a Lower Limit governor. (Therefore, only hits >RL presented on LIMS Report/Form 1.)
> %Recovery is calculated using the raw result.
> %RPD is calculated using the reported result.
>
> Does this help? If you'd like me to call and discuss in further detail, I'm happy to do so.
>
> Please let me know how I can help.
> Regards,
> Abbie
>
> ---
>
> **From:** DataQual [mailto:dataqual@charter.net]
> **Sent:** Friday, February 22, 2008 2:56 PM
> **To:** Page, Abbie
> **Cc:** Chelsea.Bennet@ch2m.com
> **Subject:** Re: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195
>
> Dear Abbie,
>
> What is confusing is that there are % recoveries listed for the results that are below the RL--and the concentration for the compound is listed as non-detected, "U". Can you please check into this or explain?
>
> Thank you,

Laura

----- Original Message -----
From: Page, Abbie
To: DataQual
Cc: Chelsea.Bennet@ch2m.com
Sent: Friday, February 22, 2008 12:25 PM
Subject: RE: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Hi Laura,

I've obtained some information regarding the % RPD No Calculation (NC) questions you raised.

Essentially, this NC is reflected appropriately per our IT group's intentions when they programmed our current LIMS system.

As I understand, values less than (<) our Reporting Limit (RL) will appear on the raw data scans, even if we are not evaluating below our RL. The Lab Control Standard *does* calculate %Recovery for values <RL because there are cases where we spike near our RL and/or may recover slightly below RL; however, the same calculation rule intentionally does not apply to the RPD calculation.

If it is helpful, I can add a statement to the narrative to elaborate. Please let me know what additional information I can offer regarding this issue.

Thank you,
Abbie

From: DataQual [mailto:dataqual@charter.net]
Sent: Tuesday, February 19, 2008 12:50 PM
To: Page, Abbie
Cc: Chelsea.Bennet@ch2m.com
Subject: SDG#YORK14, 16 and 18 SVOA Yorktown CTO-195

Dear Abbie,

Though I know you haven't had a chance to get back to me on the e-mail question I sent you earlier on the MS/MSD question below. I just wanted to let you know that after going through more of the SVOA data I have noticed the same MS/MSD question in SDG# YORK14, 16 and 18. Again, it appears to me that concentrations are not being reported on the Form III that are listed in the raw data. If you could just have this checked I would appreciate it. Thank you.

Thanks,
Laura

----- Original Message -----
From: DataQual
To: Page, Abbie
Sent: Friday, February 15, 2008 1:31 PM
Subject: Re: SDG#YORK13 SVOA Yorktown CTO-195

Dear Abbie,

I have another question within the same SDG, I'm sorry that I didn't catch it before sending the previous e-mail. Could you please check the two Form IIIs within the SVOA SDG #YORK13 for pentachlorophenol. It

appears to me that as the form states pentachlorophenol concentration is not reported for YS21-GW06-1207MS and YS22-SW02-1207MSD and the RDP is not calculated for both (p. 79-82). According the raw data it appears that the compound is there, can you please have this double checked.

Thanks so much,
Laura

----- Original Message -----
From: Page, Abbie
To: DataQual
Cc: Chelsea.Bennet@ch2m.com
Sent: Friday, February 15, 2008 12:43 PM
Subject: RE: SDG#YORK13 SVOA Yorktown CTO-195

Hi Laura,

I will look into this and get back to you shortly.

Regards,
Abbie

From: DataQual [mailto:dataqual@charter.net]
Sent: Friday, February 15, 2008 1:05 PM
To: Page, Abbie
Cc: Chelsea.Bennet@ch2m.com
Subject: SDG#YORK13 SVOA Yorktown CTO-195

Dear Ms. Page,

I am providing data validation services for the CH2M HILL Yorktown data. I have a question concerning the SVOA fraction of SDG# YORK13. Sample YSA21-GW04-1207 exhibited non-compliant internal standards, according to the case narrative the sample was re-analyzed. However I am not finding the re-analysis in the data package--no raw data or listing on any of the forms. Can you please check into this and letting me know if I am overlooking anything or resubmit any data or forms that are missing. Please feel free to contact me.

Thank you,
Laura

Laura Maschhoff
DataQual Environmental Services, LLC
5830 Amberway Drive
St. Louis, MO 63128
314-330-1327
dataqual@charter.net

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This SDG contains total and dissolved metals mercury and cyanide analysis using ILM05.3. Please note that method criteria were used to assess all calibration standards because Region III does not have a validation document for the ILM05.3 SOW. Region III qualification conventions and qualifiers were used.

HOLDING TIMES

Sampling Date:	12/12, 12/13, 12/14	
Received Date:	12/13, 12/14 & 12/15	Cooler temps OK, receipt documentation present.
Prep. Dates:	12/20, 1/4 ICP, 1/4 Hg, 12/20, 12/27 CN	All holding time requirements were met.
Analysis Dates:	1/23 ICP, 1/8 Hg, 12/20, 12/27 CN	

CALIBRATIONS

An initial calibration single point calibration was analyzed for ICP metals. Initial calibration curve was analyzed for Hg and CN. All initial calibration criteria were met. Calibration verification criteria were met for all ICV and CCV standards. The ICSAB standards exhibited acceptable recoveries for all analytes. The CRI check standards were analyzed and met method criteria. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the CRDL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the CRQL, result is reported as non-detect at the CRQL.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBLK – positive cont.	selenium	0.272J mg/Kg	1.36 mg/Kg	B
	mercury	0.010J mg/Kg	0.050 mg/Kg	B
ICB/CCB – negative cont.	cyanide	-0.723J ug/L	10X MDL (0.11 mg/Kg)	L/UL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB, if less than the analyte CRDL, is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

See validation report for specific samples and qualifications.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MD pair in this SDG exhibited non-compliant recoveries for one compound. The analytes compound cyanide recovered below the QC limits. The PDS spike was acceptable. The compound cyanide was recovered at 52% and all results were flagged L/UL. All associated LCS samples exhibited acceptable recoveries for all analytes.

SERIAL DILUTIONS

The serial dilution analysis exhibited non-compliant %Ds for several analytes. The analytes aluminum (12%), barium (15%), cobalt (16%), chromium (13%), iron (12%), magnesium (13%), manganese (13%), sodium (13%), potassium (11%) and vanadium (11%) were qualified as estimated J/UJ in all samples.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL.
Sample ID: none Duplicate Sample ID:

Comments: No qualifications were required.

SAMPLE CALCULATION

EPA SAMPLE ID: YBKG-SD02-1207
COMPOUND: magnesium
CONCENTRATION: 6020 mg/Kg
%Solids - 37
1.51g to 100 ml
Raw Data result: 33610 ug/L

33610 ug/L * 0.100L/1.51g * 1/0.37 = 6015.75mg/Kg

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the IDL and the CRDL were qualified as estimated, J by the laboratory.

Reviewer Jacqueline Cleveland **Date:** 3/6/08

USEPA-CLP FORMS

2B-IN

CRQL CHECK STANDARD

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG No.: YORK18

CRQL Check Standard Source: Inorganic Ventu

Concentration Units: ug/L

Analyte	CRQL Check Standard				
	Initial			Final	
	True	Found*	%R (1)	Found*	%R (1)
Silver	10.0			9.46 J	95
Aluminum	200.0			236.10	118
Antimony	60.0			60.58	101
Arsenic	10.0			8.97 J	90
Barium	200.0			200.80	100
Beryllium	5.0			5.29	106
Calcium	5000.0			5299.00	106
Cadmium	5.0			4.96 J	99
Cobalt	50.0			50.03	100
Chromium	10.0			10.05	100
Copper	25.0			23.36 J	93
Iron	100.0			171.30	171
Magnesium	5000.0			5295.00	106
Manganese	15.0			15.19	101
Sodium	5000.0			5273.00	105
Nickel	40.0			40.41	101
Lead	10.0			8.95 J	90
Potassium	5000.0			5130.00	103
Selenium	35.0			36.63	105
Thallium	25.0			24.15 J	97
Vanadium	50.0			51.88	104
Zinc	60.0			60.43	101

NQ all results > Action Limit JLC 22608

(1) Control Limits: 70-130 with the following exceptions:
ICP-AES - Antimony, Lead, and Thallium: 50-150
ICP-MS - Cobalt, Manganese, and Zinc: 50-150

* if applicable, enter the concentration qualifier "J" or "U" after the concentration in these columns (e.g., 0.20U for Mercury)

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK18

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
		C	1	C	2	C	3	C		C	M
Silver	10.000	U	-0.513	J NQ	10.000	U	-0.797	J NQ	1.000	U	P
Aluminum	200.000	U	200.000	U	200.000	U	200.000	U	20.000	U	P
Antimony	60.000	U	60.000	U	60.000	U	60.000	U	6.000	U	P
Arsenic	10.000	U	10.000	U	10.000	U	10.000	U	1.000	U	P
Barium	200.000	U	200.000	U	200.000	U	200.000	U	-0.327	J	P
Beryllium	5.000	U	5.000	U	5.000	U	5.000	U	0.500	U	P
Calcium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	500.000	U	P
Cadmium	5.000	U	5.000	U	5.000	U	5.000	U	0.500	U	P
Cobalt	50.000	U	50.000	U	50.000	U	50.000	U	5.000	U	P
Chromium	10.000	U	10.000	U	10.000	U	10.000	U	0.091	J	P NQ
Copper	-0.722	J NQ	25.000	U	25.000	U	25.000	U	0.287	J	P NQ
Iron	100.000	U	11.700	J NQ	18.460	J NQ	14.600	J NQ	10.000	U	P
Magnesium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	500.000	U	P
Manganese	0.130	J NQ	15.000	U	0.111	J NQ	15.000	U	0.030	J	P NQ
Sodium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	500.000	U	P
Nickel	40.000	U	40.000	U	40.000	U	0.831	J NQ	4.000	U	P
Lead	10.000	U	10.000	U	10.000	U	10.000	U	1.000	U	P
Potassium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	500.000	U	P
Selenium	35.000	U	35.000	U	35.000	U	35.000	U	0.272	J	P ✓
Thallium	25.000	U	25.000	U	25.000	U	25.000	U	2.500	U	P
Vanadium	50.000	U	0.663	J NQ	50.000	U	50.000	U	5.000	U	P
Zinc	60.000	U	60.000	U	60.000	U	60.000	U	6.000	U	P

✓ flag as noted in report

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK18

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver			10.000	U					1.000	U	P
Aluminum			200.000	U					20.000	U	P
Antimony			60.000	U					6.000	U	P
Arsenic			-1.903	J NQ					1.000	U	P
Barium			200.000	U					-0.265	J	P NQ
Beryllium			5.000	U					0.500	U	P
Calcium			5000.000	U					500.000	U	P
Cadmium			5.000	U					0.500	U	P
Cobalt			50.000	U					5.000	U	P
Chromium			10.000	U					0.075	J	P NQ
Copper			25.000	U					2.500	U	P
Iron			13.260	J NQ					3.848	J	P NQ
Magnesium			5000.000	U					500.000	U	P
Manganese			15.000	U					0.062	J	P NQ
Sodium			5000.000	U					4.147	J	P NQ
Nickel			40.000	U					4.000	U	P
Lead			10.000	U					1.000	U	P
Potassium			5000.000	U					500.000	U	P
Selenium			35.000	U					3.500	U	P
Thallium			25.000	U					2.500	U	P
Vanadium			50.000	U					5.000	U	P
Zinc			60.000	U					6.000	U	P

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK18

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.010	J	CV

JAC 22608
✓ flag as noted in report

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK18

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Cyanide	-0.584	J	-0.826	J	-0.474	J	-0.517	J	50.000	U	AS

✓ flag L/UL in all samples
↑ 10X MDL

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK18

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Cyanide			-0.826	J							AS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK18

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

	Initial Calibration Blank(ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
Analyte		C	1	C	2	C	3	C		C	M
Cyanide	10.000	U	-0.520	J	10.000	U	10.000	U	50.000	U	AS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: _____ SDG NO.: YORK18

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Cyanide	-0.743	J	-0.732	J	-0.737	J					AS

USEPA-CLP FORMS

5A-IN

MATRIX SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

YBKG-SD06-1207S

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 36.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	0.6500	J	0.0728	J	0.56	103		CV
Cyanide	75 - 125	6.5453	J	0.2943	J	12.08	52	N	AS

LIUL

Comments:

216

5B-IN
POST-DIGESTION SPIKE SAMPLE RECOVERY

EPA SAMPLE NO. tidmethod

735670A

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Cyanide		22.12		2.65	J	20.0	97		AS

Comments:

8-IN

ICP-AES and ICP-MS SERIAL DILUTIONS

EPA SAMPLE NO.

YS04-SD02-1207L

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 NRAS No.: SDG NO.: YORK18

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M	
Silver	10.00	U	50.00	U			P	
Aluminum	106700.00		119900.00		12	E	P	J/UJ
Antimony	60.00	U	300.00	U			P	
Arsenic	56.61		69.95		24		P	
Barium	187.80	J	216.65	J	15	E	P	J/UJ
Beryllium	4.03	J	4.66	J	16		P	
Calcium	9754.00		11015.00	J	13		P	
Cadmium	0.72	J	25.00	U	100		P	
Cobalt	44.06	J	51.00	J	16	E	P	J/UJ
Chromium	205.70		232.40		13	E	P	J/UJ
Copper	55.08		59.15	J	7		P	
Iron	186700.00		209950.00		12	E	P	J/UJ
Magnesium	35300.00		40065.00		13	E	P	J/UJ
Manganese	1698.00		1914.00		13	E	P	J/UJ
Sodium	48600.00		54800.00		13	E	P	J/UJ
Nickel	86.72		102.10	J	18		P	
Lead	100.70		105.20		4		P	
Potassium	20950.00		23240.00	J	11	E	P	J/UJ
Selenium	3.85	J	15.54	J	304		P	
Thallium	25.00	U	125.00	U			P	
Vanadium	252.40		280.35		11	E	P	J/UJ
Zinc	332.40		382.50		15		P	

This SDG contains data analyzed for acid volatile sulfide and simultaneously extracted metals analytes (AVS/SEM). Please note that method criteria were used to assess all calibrations and quality control because Region III does not have a validation document for this method. Region III qualification conventions and qualifiers were used.

HOLDING TIMES

Sampling Date: 12/12, 12/13, 12/14 Cooler temps OK, receipt documentation present.
Received Date: 12/13, 12/14 & 12/15 Holding time requirements were met.
Prep. Dates: AVS: 12/15 & 12/21, SEM - IC P 12/15 & 12/21 SEM - CV 1/18/08
Analysis Dates: AVS: 12/15 & 12/21 SEM - IC P 1/4 SEM - CV 1/18

CALIBRATIONS

AVS is a titration method. Analysis for SEM was per SW-846 methods. An initial calibration single point calibration was analyzed for ICP metals. Initial calibration curve was analyzed for Hg. All initial calibration criteria were met. Calibration verification criteria were met for all ICV and CCV standards. The ICSAB standards exhibited acceptable recoveries for all analytes. The CRI check standards were analyzed and met method criteria. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBlk1	copper	0.015J umole/g	0.075 umole/g	B

Field QC blanks were not submitted for the AVS/SEM fraction.

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB if less than the analyte's RDL is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

See validation report for specific samples and qualifications.

MATRIX SPIKE/DUPLICATE SUMMARY

There was no MS/MD sample in this SDG. All associated LCS samples exhibited acceptable recoveries for all analytes.

SERIAL DILUTIONS

The serial dilution analysis of sample YS22-SD04-1207 exhibited non-compliant %Ds for three analytes. Cadmium (28.8%), nickel (40.4%) and lead (28.9%) were flagged as estimated in the field samples.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the RL.

Comments: No qualifications were required.

SAMPLE CALCULATION

EPA SAMPLE ID: YSA14-SD05-1207
COMPOUND: AVS
CONCENTRATION: 3.2 umole/g
%Solids -

Titrated result: 103 mg/Kg

103 mg/Kg * 1Kg/1000g * 1 umole/0.032mg = 3.219 umole/g

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified.

Reviewer Jacqueline Cleveland **Date:** 3/6/08

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

PBLK1

Lab Name: TAL BURLINGTON Contract: 27000

Lab Code: STLVT Case No.: 27000 SDG No.: YORK18

Matrix: SOIL Client: SUBR7 Lab Sample ID: PBLK1

% Solids: Date Received:

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW7470A	Mercury	ND	umole/g	U		0.00012	01/18/2008	10:42	PBSEMHG011508
SW6010B	Silver	ND	umole/g	U		0.00070	01/04/2008	16:00	PBSEM121507B
SW6010B	Cadmium	ND	umole/g	U		0.00022	01/04/2008	16:00	PBSEM121507B
SW6010B	Copper	ND	umole/g	U		0.0020	01/04/2008	16:00	PBSEM121507B
SW6010B	Nickel	0.0024	umole/g	B		0.0017	01/04/2008	16:00	PBSEM121507B
SW6010B	Lead	-0.0015	umole/g	B		0.00097	01/04/2008	16:00	PBSEM121507B
SW6010B	Zinc	0.0059	umole/g	B		0.00038	01/04/2008	16:00	PBSEM121507B
AVS	Acid Volatile Sulfide	ND	umole/g	U		0.50	12/15/2007	0630	BLKSU121507A
	Ratio of SEM*/AVS	NA							

No Quals
JAC
2/26/08

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

JAC 2/26/08

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

PBLK2

Lab Name: TAL BURLINGTON | Contract: 27000

Lab Code: STLVT | Case No.: 27000 | SDG No.: YORK18

Matrix: SOIL | Client: SUBR7 | Lab Sample ID: PBLK2

% Solids: | Date Received:

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW7470A	Mercury	ND	umole/g	U		0.00012	01/18/2008	12:06	PBSEMHG011508
SW6010B	Silver	ND	umole/g	U		0.00070	01/04/2008	12:11	PBSEM122107A
SW6010B	Cadmium	ND	umole/g	U		0.00022	01/04/2008	12:11	PBSEM122107A
SW6010B	Copper	0.015	umole/g	B		0.0020	01/04/2008	12:11	PBSEM122107A
SW6010B	Nickel	-0.0027	umole/g	B		0.0017	01/04/2008	12:11	PBSEM122107A
SW6010B	Lead	0.0015	umole/g	B		0.00097	01/04/2008	12:11	PBSEM122107A
SW6010B	Zinc	0.0039	umole/g	B		0.00038	01/04/2008	12:11	PBSEM122107A
AVS	Acid Volatile Sulfide	ND	umole/g	U		0.50	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	NA							

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

USEPA-CLP FORMS

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BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 SAS No.: _____ SDG No.: YORK18

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver	0.3	U	0.3	U	-0.4	B	-0.3	B	0.075	U	P
Cadmium	-0.1	B	See PB 0.1	U	0.1	U	0.1	U	0.025	U	P
Copper	0.5	U	2.5	B	See PB 0.5	B	1.0	B	0.972	B	P
Nickel	-0.8	B	0.4	U	-1.0	B	0.4	U	-0.157	B	P
Lead	1.2	B	1.2	B	See PB 0.8	U	1.3	B	0.303	B	P
Zinc	0.1	U	0.8	B	See PB 0.2	B	0.4	B	0.252	B	P

See AWS sheet JAC 03/16/18

USEPA-CLP FORMS

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BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 SAS No.: _____ SDG No.: YORK18

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver			0.3	B							P
Cadmium			-0.1	B							P
Copper			0.5	U							P
Nickel			-0.4	B							P
Lead			0.9	B							P
Zinc			-0.1	B							P

USEPA-CLP FORMS

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BLANKS

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 SAS No.: _____ SDG No.: YORK18

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver	0.3	B	0.9	B	0.3	U			0.075	U	P
Cadmium	0.1	B	0.3	B	0.1	U			0.025	U	P
Copper	0.5	U	2.3	B	0.7	B			0.125	U	P
Nickel	0.7	B	0.7	B	0.5	B			0.141	B	P
Lead	0.8	U	0.8	U	0.8	U			-0.311	B	P
Zinc	0.1	U	0.8	B	0.2	B			0.384	B	P

See AVS sheet JAC 22408

USEPA-CLP FORMS

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ICP SERIAL DILUTIONS

SAMPLE NO.

YS22-SD04-1207L

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLVT Case No.: 27000 SAS No.: _____ SDG No.: YORK18

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Silver	3.00	U	15.00	U			P
Cadmium	14.97	B	19.28	B	28.8	E	P
Copper	23.82	B	38.97	B	63.6		P
Nickel	78.79	B	46.98	B	40.4	E	P
Lead	75.69	B	53.78	B	28.9	E	P
Zinc	566.90		585.80	B	3.3		P

Cleveland

From: "Madison, Jim" <Jim.Madison@testamericainc.com>
To: "Cleveland" <cleve137@charter.net>
Sent: Thursday, February 21, 2008 8:04 AM
Subject: RE: SEM Metals Calculation

You are absolutely correct Jackie - although the solution is liquid, we do weigh it out and the form 13 should reference grams (the raw prep log on page 453 does show grams). Thanks for pointing this out - we were not aware that the form 13 was incorrect, and will change that. I appreciate the feedback.

Jim.

-----Original Message-----
From: Cleveland [mailto:cleve137@charter.net]
Sent: Wednesday, February 20, 2008 6:25 PM
To: Madison, Jim
Subject: Re: SEM Metals Calculation

Jim,

Quick question: The sample aliquot on the calcuation example is in g but the Form 13 preparation log (p371 of sample you sent) is in ml. I am assuming that the calculation example is correct and the Form 13 is a typo?

Jackie
----- Original Message -----
From: "Madison, Jim" <Jim.Madison@testamericainc.com>
To: "Jackie Cleveland" <cleve137@charter.net>
Sent: Wednesday, February 20, 2008 2:03 PM
Subject: FW: SEM Metals Calculation

Hi Jackie - Our IT specialist put together an example calculation - she pulled the appropriate pages from the data package behind the calculation page in the attachment. Please let us know if you have any questions.

Jim.

-----Original Message-----
From: Chirgwin, Karen
Sent: Wednesday, February 20, 2008 2:45 PM
To: Madison, Jim
Cc: McCracken, Kirstin
Subject: SEM Metals Calculation

Jim,

I have put together an example SEM calculation for Jackie Cleveland. This should be what she needs.

Please let me know if she has any additional questions.

Karen

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Cleveland

From: "Madison, Jim" <Jim.Madison@testamericainc.com>
To: "Cleveland" <cleve137@charter.net>
Sent: Wednesday, February 20, 2008 7:13 AM
Attach: AVSSEM Allen Fu Paper.pdf
Subject: RE: Request for further Information RE: AVS/SEM NWS Yorktown

Sorry Jackie - I did not notice the front end of the website - I had it in my favorites as Sediment Info, and forgot it was internal - here is a pdf copy. I should be able to get an example calculation today...

Jim.

From: Cleveland [mailto:cleve137@charter.net]
Sent: Tuesday, February 19, 2008 6:48 PM
To: Madison, Jim
Subject: Re: Request for further Information RE: AVS/SEM NWS Yorktown

Jim,

I am unable to access the website through the link that you sent. It may be a proprietary site. Anyway, I will look at the other copy you sent and will be watching for the example calculations from YORK19. Thanks so much for your help.

Jackie

> ----- Original Message -----
> **From:** Madison, Jim
> **To:** Cleveland
> **Cc:** DataQual Environmental Services, LLC ; Chelsea Bennet
> **Sent:** Tuesday, February 19, 2008 9:40 AM
> **Subject:** RE: Request for further Information RE: AVS/SEM NWS Yorktown
>
> Jackie - I found the attached link to a cleaner copy of the method...
>
> Jim.
>
> http://stlnet/sedweb/MetalsBioavailability/AVSSEM/AVS%20Method.pdf
>
> ---
>
> **From:** Madison, Jim
> **Sent:** Tuesday, February 19, 2008 10:27 AM
> **To:** 'Cleveland'
> **Cc:** DataQual Environmental Services, LLC; Chelsea Bennet
> **Subject:** RE: Request for further Information RE: AVS/SEM NWS Yorktown
>
> Hi Jackie -
>
> I am looking for a clean copy of the original AVS-SEM paper written by Allen and Fu - I can scan my copy, but it's a bit fuzzy. For now, here is our SOP, which explains the approach and has some example calculations. We have an automated program to convert to umole/gram, so do not write out the calculations - but I'll see if we

can do that for YORK19. The paper does stipulate conversion to umole/gram, so that is our default and should be the one result used in the final report. We only report the AVS and metals both ways because we are a bit limited by the commercial software we use to report metals (MARRS). We must report in ug/L to load data into the conversion for umole/gram...

Jim.

From: Cleveland [mailto:cleve137@charter.net]
Sent: Monday, February 18, 2008 5:13 PM
To: Madison, Jim
Cc: DataQual Environmental Services, LLC; Chelsea Bennet
Subject: Request for further Information RE: AVS/SEM NWS Yorktown

Dear Jim,

Good Afternoon. I am validating the metals analyzed by TestAmerica South Burlington for AVS/SEM and I need a couple of things from you. Please provide me with a copy of the method(s) used for these analyses. I also need calculation examples for the conversion of the metals and sulfide results from mg/Kg to umole/g. The SDG I am currently working on is YORK19 so if you would pull your examples from that SDG that would be great! I noticed that you have provided results forms for both the AVS and the metals using both units. The EDD is presented in umoles/g for both the metals and the sulfide so I am assuming this is the unit requested for the targets. Please let me know if I am correct in this assumption as I only want to present one unit for the metals and one for the sulfide in my final report.

Thank you for your help.

Jackie

Jacqueline Cleveland, VP
DataQual Environmental Services, LLC
137 Royallprairie Lane
O'Fallon, MO 63368-6986
636-352-9391
cleve137@charter.net

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SEM Metals Calculations:

The general calculation for SEM metals is:

Result (mg/Kg) = Result(ug/L) * (final volume (mL)/Initial sample weight (g))*Dilution*(100/Solids)

Result (umole/g) = ((Result (mg/Kg))/(mw (g/mole)) * (correction for stoichiometry)

For sample YS12-SD04-1207 (lab ID 735734), the result for Copper is calculated as follows:

Result(mg/Kg) = ((6.7860 ug/L)*(0.25mL/11.92g)*10*(100/83.6)) = 1.7 mg/Kg (reported on Form 1)

Result (umole/g) = ((1.7 mg/Kg)/(63.546 g/mole)) * 1 = 0.027 umole/g (reported on AVS/SEM Summary)

Molecular weight for SEM Metals (g/mole):

Element	Molecular Weight (g/mole)	Stoichiometry
Cadmium	112.411	1
Copper	63.546	1
Cobalt	58.9332	1
Nickel	58.6934	1
Zinc	65.39	1
Lead	207.2	1
Sulfide	32.066	1
Mercury	200.59	1
Chromium	51.9661	1
Aluminum	26.981538	1
Antimony	121.760	1
Silver	107.868	2

USEPA-CLP FORMS

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PREPARATION LOG

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 SAS No.: _____ SDG No.: YORK19

Method: CV

EPA Sample No.	Preparation Date	Initial Volume mL	Volume (mL)
BLK011508A	01/15/08	10.00	250.0
LCS011508A	01/15/08	10.00	250.0
YS12-SD01-1207	01/15/08	10.05	250.0
YS12-SD01-1207D	01/15/08	10.12	250.0
YS12-SD01-1207S	01/15/08	10.15	250.0
YS12-SD02-1207	01/15/08	10.62	250.0
YS12-SD02P-1207	01/15/08	10.25	250.0
YS12-SD03-1207	01/15/08	10.35	250.0
~~YS12-SD04-1207~~	~~01/15/08~~	~~11.92~~	~~250.0~~
YS12-SD05-1207	01/15/08	10.08	250.0
YS12-SD06-1207	01/15/08	11.80	250.0
YS12-SD07-1207	01/15/08	11.00	250.0
YS12-SD07P-1207	01/15/08	10.42	250.0

Form XIII - IN

AVS/SEM Analysis Data Summary

CLIENT SAMPLE NO.

YS12-SD04-1207

Lab Name: TAL BURLINGTON

Contract: 27000

Lab Code: STLVT

Case No.: 27000

SDG No.: YORK19

Matrix: SEDIMENT

Client: SUBR7

Lab Sample ID: 735734

% Solids: 83.6

Date Received: 12/18/2007

Method	Parameter	Conc.	Units	Qual	MDL	RL	Run Date	Run Time	Preparation Batch
SW6010B	Silver	0.0013	umole/g	B		0.00091	01/24/2008	03:25	PBSEM011508A
SW6010B	Cadmium	0.00041	umole/g	B		0.00019	01/24/2008	03:25	PBSEM011508A
SW6010B	Copper	0.027	umole/g	B		0.0017	01/24/2008	03:25	PBSEM011508A
SW6010B	Nickel	0.0013	umole/g	B		0.00099	01/24/2008	03:25	PBSEM011508A
SW6010B	Lead	0.038	umole/g			0.0010	01/24/2008	03:25	PBSEM011508A
SW6010B	Zinc	0.10	umole/g			0.00034	01/24/2008	03:25	PBSEM011508A
SW7470A	Mercury	ND	umole/g	U		0.00012	01/18/2008	12:36	PBSEMHG011508
AVS	Acid Volatile Sulfide	ND	umole/g	U		0.80	12/21/2007	0900	BLKSU122107A
	Ratio of SEM*/AVS	NA							

*SEM is user defined to include the sum of the concentration of each metal reported with this case.

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS12-SD04-1207

Lab Name: TestAmerica Burlington Contract: 27000

Lab Code: STLV Case No.: 27000 SAS No.: SDG No.: YORK19

Matrix (soil/water): SEDIMENT Lab Sample ID: 735734

Level (low/med): LOW Date Received: 12/18/07

% Solids: 83.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	0.14	B		P
7440-43-9	Cadmium	0.046	B		P
~~7440-50-8~~	Copper	1.7	B		P
7439-97-6	Mercury	0.025	U		CV
7440-02-0	Nickel	0.074	B		P
7439-92-1	Lead	7.8		*	P
7440-66-6	Zinc	6.6			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form I - IN

TestAmerica Burlington **Cu-LL**

Analytical Review Report

Data File: 012308-05.txt

Date Printed: 1/24/08
Truevalue List: ICP7_LCSS-AQ_010408

TJA ICAP 7
ICP METALS 6010

Analysis Start Date: 01/24/08 Start Time: 02:02:3
Analysis End Date: 01/24/08 End Time: 03:46:1

Lab Number	Dil	Flag	Raw Avg (ug/L)	Rep1 (ug/L)	Rep2 (ug/L)	%RSD	Conc	Rec	TV	LCL	UCL
Instrument Quality Control Samples											
S0	1		0.092	0.000	0.000	2.85	0.092				
STD4	1		17.830	0.000	0.000	0.86	17.8				
ICV1	1	PASS	465.800	466.700	464.800	0.29	465.80	93.2	500.0	90	110
ICB1	1	PASS	-0.333	-0.484	-0.182	64.05	-0.3				+/-25.00
ICSA1	1	PASS	0.283	0.535	0.031	126.10	0.28			-75	75
ICSAB1	1	PASS	483.400	485.900	480.800	0.75	483	99.4	486	80	120
CRI1	1	PASS	23.020	23.250	22.790	1.40	23.02	92.1	25.0	50	150
CCV1	1	PASS	181.900	182.600	181.200	0.52	181.90	91.0	200.0	90	110
CCB1	1	PASS	0.278	-0.130	0.687	207.60	0.3				+/-25.00
CCV2	1	PASS	181.000	181.700	180.400	0.49	181.00	90.5	200.0	90	110
CCB2	1	PASS	-0.289	-0.295	-0.283	2.83	-0.3				+/-25.00
CCV3	1	PASS	182.200	182.800	181.700	0.43	182.20	91.1	200.0	90	110
CCB3	1	PASS	0.164	0.373	-0.046	180.90	0.2				+/-25.00
Quality Control and Field Samples											
LRV	1	PASS	3998.000	3995.000	4002.000	0.12	4000				
BLK011508A	10	PASS	0.848	1.953	-0.257	184.30	0.85				
LCS011508A	1	PASS	2221.000	2219.000	2222.000	0.10	2220	88.8	2500		
737730	10	PASS	79.420	79.440	79.400	0.04	79.4				
737730L	50	FAIL	95.790	91.890	99.690	5.76	478.95				
735730A	10	PASS	316.600	317.600	315.500	0.48	316.60	98.9	250.0		
735730DP	10	PASS	70.910	71.840	69.980	1.86	8.5537				
735730MS	10	PASS	2167.000	2161.000	2173.000	0.39	216.7000	83.5	2500 ~~25.00~~		
735731	10	PASS	28.050	27.870	28.220	0.87	3.5				
735732	10	PASS	23.340	21.370	25.310	11.94	3.0				
735733	10	PASS	10.850	11.980	9.719	14.72	1.3				
735734	10	PASS	67.860	66.140	69.570	3.57	8.1				
735965	10	PASS	49.800	51.840	47.750	5.81	6.8				
735966	10	PASS	7.614	5.983	9.244	30.29	0.84				
735967	10	PASS	23.680	21.550	25.800	12.70	4.1				
735968	10	PASS	42.980	46.540	39.410	11.74	5.9				

LRV = 100,000
IDL = 0.44 (4.4)

— already corrected for dilution —

undiluted result = 6.7860

Holding Times

Sampling Date: 12/12, 12/13, 12/14
Received Date: 12/13, 12/14 & 12/15
received 12/14, 12/15, 12/18 at Pittsburgh
Extraction Date: 12/18, 12/20
Analysis Dates: 1/8

Cooler temps OK, receipt documentation present.
Holding time requirements were met.

All extraction and analysis holding times were met.

Calibrations

Initial calibrations were performed according to the CLP method with a three-point curve for all single component pesticides and a single point for toxaphene. Single point injections were analyzed for the aroclors. Calibration factors were calculated. %RSDs were within QC limits. Continuing calibration standards were analyzed per the CLP method. All PEM breakdowns and %D criteria were met. All INDA/INDB %D criteria were within QC limits. Column resolution criteria were met. Retention time windows were provided. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Raw data was verified.

Initial Calibration Date: 1/7/08, GC12
CF and %RSD Calculations: **Sequence 1/7/08-1/8/08 on GC12, RTX-1701 & RTX-50**

Compound Name: METHOXYCHLOR, mid-level, RTX-1701
Lab Value: 25754730

Area of Compound	5150946
Conc. of Compound	0.200
Calculated CF	25754730

Compound Name: METHOXYCHLOR
Lab Value: 6.9

CF of STD 1	24604360
CF of STD 2	25754730
CF of STD 3	28147320
% RSD	6.907

Continuing Calibration File ID: **Sequence 1/7/08-1/8/08 on GC12, RTX-1701 & RTX-50**
CONC. and %D Calculations:

Compound Name: 4,4'-DDT in PEMYD, 1/8/08, 1453 on GC12, RTX1701
Lab Value: 0.1184

area of compound	2387457
mid-level CF	20167875
calculated conc.	0.11838

Compound Name: 4,4'-DDT in PEMYD, 1/8/08, 1453 on GC12, RTX1701
Lab Value: 18.4

nominal amount	0.1000
calculated amount	0.1184
% D	18.4

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample, and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is less than five times (5X) the blank value. (Region III)

No contamination was reported in the associated method blank or instrument blanks. The associated field QC blanks did not exhibit target compound contamination.

Blank ID	Compound	Concentration	Action Level	Q Flag

SURROGATE RECOVERIES

All surrogate recoveries were acceptable. Samples did not require qualification due to non-compliant surrogate recoveries.

MATRIX SPIKE/MATRIX SPIKE DUPLICATES

The MS/MSD pair of sample YS22-SD04-1207 exhibited low recoveries for lindane. No qualifications were required.

LABORATORY CONTROL SAMPLES

There was no LCS sample submitted for this SDG.

FIELD DUPLICATE SAMPLE SUMMARY

Compound	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!

Sample ID: **none** **Duplicate ID:**

Comments: No positive results

SAMPLE RESULT VERIFICATION

Reported sample results and raw data were verified. There were no positive results reported in this SDG.

SAMPLE CALCULATION

EPA SAMPLE ID: YSA14-SD05-1207
STANDARD ID: ICAL 1/7/08, mid-level CF, RTX-50
COMPOUND: Endrin
CONCENTRATION: 69.2 ug/Kg

	V'ater (ug/L)	Soil (ug/Kg)
Area of Compound		355548
CF of Compound		9258550
Final Volume (ul)		10000
Dilution Factor		1
GPC Factor	na	2
Injection Volume		1
Weight of Sample	na	30
Initial Volume of Sample (ml)		NA
Dryness Factor	na	0.37
Concentration		69.184

Reviewer: Jacqueline Cleveland **Date:** 3/6/08

OCLP OLM04.3 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: TestAmerica Burlington

Lab Code: TALPIT SDG No: YORK18

Matrix Spike ID: YSA14-SD05-1207 Level:(low/med) LOW

Lot #: C7L180269 WO #: KED2V1AD
BATCH: 7354026

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
Aldrin	45.1	ND	30.4	67	34- 132	
Dieldrin	90.1	ND	62.3	69	31- 134	
Endrin	90.1	ND	69.2	77	42- 139	
gamma-BHC (Lindane)	45.1	ND	14.9	33*	46- 127	a
4,4'-DDT	90.1	ND	31.6	35	23- 134	
Heptachlor	45.1	ND	30.1	67	35- 130	

NG QC Check

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 6 outside limits

COMMENTS:

FORM III

OCLP OLM04.3 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: TestAmerica Burlington

Lab Code: TALPIT SDG No: YORK18

Matrix Spike ID: YSA14-SD05-1207 Level:(low/med) LOW

Lot #: C7L180269 WO #: KED2V1AE
BATCH: 7354026

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	QUAL
Aldrin	45.1	28.1	62	7.8	43	34 - 132	
Dieldrin	90.1	56.8	63	9.2	38	31 - 134	
Endrin	90.1	64.5	72	7.0	45	42 - 139	
gamma-BHC (Lindane)	45.1	14.0	31*	5.9	50	46 - 127	a
4,4'-DDT	90.1	29.0	32	8.5	50	23 - 134	
Heptachlor	45.1	28.5	63	5.4	31	35 - 130	

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 1 out of 6 outside limits

COMMENTS:

FORM III

Holding Times

Sampling Date: 12/12, 12/13, 12/14
Received Date: 12/13, 12/14 & 12/15 Cooler temps OK, receipt documentation present.
12/14, 12/15, 12/18 at subcontractor (West Sacramento)
Extraction Dates: 12/21, 8330/8332; 12/24, Mod. 8330 (direct aspiration method)
Analysis Dates: 12/29-12/30 8330/8332; 1/3, Mod. 8330 (direct aspiration method)

Sample receipt documentation was in order. All extraction and analysis holding time requirements were met.

Calibrations

The samples in this SDG were analyzed according to SW-846 methods 8330/8332/Modified 8330. Initial calibrations were performed with a standard six to eight-point curve for all target compounds. Curve calibration factors were calculated or linear regression curves were plotted. %RSDs or correlation coefficients were within QC limits. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met. Raw data was verified. No qualifications were required due to unmet initial or continuing calibration criteria.

Initial Calibration Date: 10/8/07, Instrument LC11.I C-18 column
CF and %RSD Calculations:

Compound Name: RDX in level 4
Lab Value: 89.24

Area of Compound	4462
Conc. of Compound	50
Calculated CF	89.24

Compound Name: RDX
Lab Value: 1.550

CF of STD 1	86.8
CF of STD 2	87.4
CF of STD 3	87.5
CF of STD 4	89.24
CF of STD 5	89.82
CF of STD 6	89.055
CF of STD 7	90.66
CF of STD 8	89.718
% RSD	1.5496

Initial Calibration Date: 1/2/08, Instrument LC9 CN column

CF and %RSD Calculations:

Compound Name: nitroglycerin in level 6
Lab Value: 67.34500

Area of Compound	13469
Conc. of Compound	200
Calculated CF	67.345

Compound Name: nitroglycerin
Lab Value: 3.20

CF of STD 1	
CF of STD 2	64.4
CF of STD 3	62.25
CF of STD 4	67.0
CF of STD 5	
CF of STD 6	67.345
CF of STD 7	67.332
CF of STD 8	67.042
% RSD	3.1995

Continuing Calibration File ID:
CONC. and %D Calculations:

Compound Name: 2,6-dinitrotoluene, 12/23/07, 04:49 std5 on LC10
Lab Value: 98.6900

Area of Compound	5181
avg. CF	52.49888
calculated amount	98.68782

Compound Name: 2,6-dinitrotoluene, 12/23/07, 04:49 std5 on LC10
Lab Value: 1

nominal amount	100.
calculated amount	98.68782
% D	1.3122

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:

  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

No contamination was reported in the associated laboratory blanks. The associated field QC blank did not exhibit target compound contamination that resulted in qualification of the data.

SURROGATE RECOVERIES

All surrogate recovery criteria were met. No qualifications were required.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS22-SD04-1207 exhibited acceptable recoveries for all explosives compounds with the exception of nitroguanidine below the QC limits in the MS and MSD. The reported non-detect result in the native sample was qualified as biased low UL. The LCS samples provided with this SDG exhibited acceptable recoveries for all compounds.

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: **none** **Duplicate ID:**

Comments:

SAMPLE RESULT VERIFICATION

No positive results above the reporting limits were reported in the field samples analyzed in this SDG. Raw data was verified.

EPA SAMPLE ID: YS22-SD05-1207MS (LAB ID - KD65M 1AE)
STANDARD ID: ICAL 10/8/2007 LC11
COMPOUND: 2-NITROTOLUENE
CONCENTRATION: 0.994 mg/Kg

	Water (ug/L)	Soil (mg/Kg)
Area of Compound		1430
CF of Compound		29.07375
Final Volume (ml)		40
Dilution Factor		1
Weight of Sample	na	1.98
Initial Volume of Sample		NA
conversion factor (ug to mg)		0.001
		0.99364

Reviewer Jacqueline Cleveland **Date:** 3608

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: G7L140233 Work Order #...: KD65H1AE-MS Matrix.....: SOLID
MS Lot-Sample #: G7L140233-001 KD65H1AF-MSD
Date Sampled...: 12/12/07 Date Received..: 12/14/07
Prep Date.....: 12/21/07 Analysis Date..: 01/03/08
Prep Batch #...: 7355460
Dilution Factor: 1 % Moisture.....:

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Nitroguanidine	74 a	(79 - 117)			SW846 8330 (Modified
	76 a	(79 - 117)	3.5	(0-20)	SW846 8330 (Modified

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

JHF in matrix sample
L/UL
JHF 22608

244

Task for Billing:
362248.FI.DV
(VERIFY WITH PM)

Data Archiving Coordinator:

Start with Box:

Start with Binder:

LIST OF CONTENTS

Clean II or III: III

TO NUMBER: CTO-195

PROJECT NUMBER: 362248.FI.DV

PM NAME: Laura Cook/VBO

BASE NAME: Yorktown Naval Weapons Station

CLIENT NAME: NAVFAC Mid Atlantic

PROJECT DESCRIPTION: Yorktown August 2008 Resampling

EIS: Chelsea Bennet DATE: October 9, 2008

Archived By:

Date:

Box Number:

Binder Number:

Laboratory Data _____ or Validation Reports___X___

SDG Description: YORK23 GW, QC, DW

SDG# or Lot # YORK23

Sampling Date: 8/5-13/2008

Sub-Contractor Name: DataQual ES.

Analysis:

_____X_____ VOA or Volatile

_____X_____ SVOA or Semivolatile

_____X_____ Pesticide / PCBs

_____ Herbicides

_____X_____ Metal or Inorganic

_____X_____ Wet Chemistry, Miscellaneous or General Chemistry

_____ Dioxins

_____X____ Explosives

_____ TCLP

_____ TPH - Diesel Range Organics (DRO), Gasoline Range Organics (GRO)

_____ Grain Size

_____X_____ Other: FMETAL, PETN, 3,5-DNA, Nitroglycerin, Nitroguanadine

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

October 6, 2008
SDG# YORK23
Test America Laboratories-Savannah, West Sacramento, and Burlington
Naval Weapons Station Yorktown

Dear Ms. Bennet,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # YORK23. The data validation was performed in accordance with the EPA CLP Statement of Work, Document OLM04.3 for volatiles, semivolatiles, and pesticides/PCBs, the EPA CLP Statement of Work ILM05.3 for metals and dissolved metals, and the SW-846 Methods 8330 for explosives compounds. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, as applicable (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review). The region does not have a validation document for the ILM05.3 methods or the SW-846 method 8330, so method criteria were substituted but Region III qualification conventions and qualifiers were used. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	V	SV	Pest/PCB	Met	D Met	Exp	NGL
YS30-DW01-0808	680-39198-1	water	X						
YS30-TB01-080508	680-39198-2	water	X						
YS08-GW07-0808	680-39416-1	water	X	X	X	X	X	X	X
YS08-EB01-081108	680-39416-2	water	X	X	X	X	X	X	X
YS08-FB01-081108	680-39416-3	water	X	X	X	X	X	X	X
YS08-GW09-0808	680-39416-4	water	X	X	X	X	X	X	X
YS08-GW09P-0808	680-39416-5	water	X	X	X	X	X	X	X
YS08-GW09A-0808	680-39416-6	water	X	X	X	X	X	X	X
YS08-TB01-081108	680-39416-7	water	X						
YS08-GW08-0808	680-39523-1	water	X	X	X	X	X	X	X
YS08-TB01-081308	680-39523-2	water	X						
YS08-EB01-081308	680-39523-3	water	X	X	X	X	X	X	X
YS08-GW09A-0808 MS	680-39416-6MS	water	X	X	X	X	X	X	X
YS08-GW09A-0808 MSD	680-39416-6MSD	water	X	X	X	X	X	X	X
YS08-GW08-0808 MS	680-39523-1MS	water		X				X	
YS08-GW08-0808 MSD	680-39523-1MSD	water		X				X	

5830 Amberway Drive • St. Louis, MO 63128 • 314-330-1327 • Fax 314-849-6264

The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- GC/MS Tuning *
- HPLC Performance *
- Initial/Continuing Calibrations *
- CRDL Standards *
- ICSA/ICSAB Standards *
- Blanks
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Serial Dilution Results *
- Field Duplicates *
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds

* - indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria.

Major Problems

No issues requiring rejection of the data were found in this SDG.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page.

VOA

No qualifications to the data were required.

SVOA

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Metals, Mercury & Cyanide

Blank contamination was noted in the field and laboratory blanks associated with the samples in this batch. Qualifications were added to the data. Specific information is provided below. Please note that field QC blanks were not flagged for laboratory blank contamination per CH2M HILL.

PCBs

No qualifications to the data were required.

Explosives by 8330

Blank contamination was noted in the QC blanks associated with samples in this batch. Qualifications were added to the data.

One result was reported with a G flag to indicate a column quantitation %D greater than 40%. This result was qualified as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were required for the SVOA fraction due to a Form V that did not list the initial calibration curve files. The laboratory was contacted and the corrected form was submitted.

Technical Holding Times

According to chain of custody records, sampling was performed on 4/15/08. Samples were received at the laboratory 4/16/07. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Blanks

SVOA

The associated method and QC blanks exhibited contamination for TICs. All B flagged TICs in the field samples are flagged B and crossed out in accordance with the Region III modifications to the National Functional Guidelines.

Explosives

Contamination was noted in the associated blanks and qualifications were required. Contamination and sample result qualifications are indicated in the following tables.

Blank ID	Compound	Concentration	Action Level	Q Flag
YS08-EB01-081108	nitrobenzene	0.38J ug/L	1.9 ug/L	B

Sample ID	Compound	Q Flag	Q Code
YS08-GW07-0808	nitrobenzene	B	BL

Metals, Mercury & Cyanide

Contamination was noted in the associated blanks and qualifications were required. Contamination and sample result qualifications are indicated in the following tables.

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBLK	cadmium	0.821J ug/L	4.105 ug/L	B
	iron	20.680J ug/L	103.4 ug/L	B
	manganese	1.495J ug/L	7.475 ug/L	B
	zinc	3.825J ug/L	19.125 ug/L	B
ICB/CCB.	nickel	1.013J ug/L	5.065 ug/L	B
	nickel	1.273J ug/L	6.365 ug/L	B
	cyanide	1.003J ug/L	5.015 ug/L	B
	mercury	-0.101J ug/L	≤10X MDL (0.028 ug/L)	L/UL
	mercury	-0.087J ug/L	≤10X MDL (0.028 ug/L)	L/UL
YS08-FB01-081108	cyanide	2.9J ug/L	14.5 ug/L	B
	silver	1.1J ug/L	5.5 ug/L	B
	copper	2.1J ug/L	10.5 ug/L	B
YS08-EB01-081108	vanadium	0.76J ug/L	3.8 ug/L	B
YS08-EB01-081308	copper	4.1J ug/L	20.5 ug/L	B
YS08-FB01-081108F	silver	1.1J ug/L	5.5 ug/L	B
	arsenic	2.6J ug/L	13 ug/L	B
	cobalt	0.43J ug/L	2.15 ug/L	B
YS08-EB01-081108F	vanadium	0.79Jug/L	3.95 ug/L	B
YS08-EB01-081308F	copper	3.0J ug/L	15 ug/L	B

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB, if less than the analyte CRDL, is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

Sample ID	analyte	Q Flag	Q Code
YS08-GW07-0808, YS08-GW07-0808F, YS08-GW09-0808, YS08-GW08-0808, YS08-GW08-0808F	mercury	UL	BL
all total metals field samples	cyanide	B	BL

Sample ID	analyte	Q Flag	Q Code
YS08-GW09-0808, YS08-GW09P-0808, YS08-09P-0808F, YS08-GW08-0808	nickel	B	BL
all field samples	cadmium	B	BL
YS08-GW07-0808F, YS08-GW09-0808F	iron	B	BL
YS08-GW07-0808F	manganese	B	BL
all field samples	zinc	B	BL
all field samples	silver	B	BL
all field samples	copper	B	BL
YS08-GW08-0808F	arsenic	B	BL
YS08-GW09-0808F, YS08-GW09P-0808F	cobalt	B	BL
YS08-GW09-0808, YS08-GW09A-0808, YS08-GW09P-0808, YS08-GW07-0808F, YS08-GW09-0808F, YS08-GW09P-0808F	vanadium	B	BL

Identification/Quantitation

Explosives by 8330

All G flagged compounds were qualified as estimated J with a qualifier code of 2C, to indicate column quantitation %Ds greater than 40%.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Jacqueline Cleveland

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q Code
No qualifications were required.				

SVOA

Sample ID	Compound	Results	Q-Flag	Q Code
All samples	blank contaminant TICs	+	B	BL

PCBs

Sample ID	Compound	Results	Q-Flag	Q Code
No qualifications were required.				

Explosives by 8330

Sample ID	Compound	Results	Q-Flag	Q Code
all samples	all G flagged compounds	+G	J	2C

Metals, Mercury & Cyanide

Sample ID	Analyte	Results	Q-Flag	Q Code
YS08-GW07-0808, YS08-GW07-0808F, YS08-GW09-0808, YS08-GW08-0808, YS08-GW08-0808F	mercury	+/- up to action limit	L/UL	BL
all total metals field samples	cyanide	+ up to action limit	B	BL
YS08-GW09-0808, YS08-GW09P-0808, YS08-GW09P-0808F, YS08-GW08-0808	nickel	+ up to action limit	B	BL
all field samples	cadmium	+ up to action limit	B	BL
YS08-GW07-0808F, YS08-GW09-0808F	iron	+ up to action limit	B	BL
YS08-GW07-0808F	manganese	+ up to action limit	B	BL
all field samples	zinc	+ up to action limit	B	BL
all field samples	silver	+ up to action limit	B	BL
all field samples	copper	+ up to action limit	B	BL
YS08-GW08-008F	arsenic	+ up to action limit	B	BL
YS08-GW09-0808F, YS08-GW09P-0808F	cobalt	+ up to action limit	B	BL
YS08-GW09-0808, YS08-GW09A-0808, YS08-GW09P-0808, YS08-GW07-0808F, YS08-GW09-0808F, YS08-GW09P-0808F	vanadium	+ up to action limit	B	BL

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high

Method/Preparation Blank Qualification Flags (Q-Flags)

Organic Methods

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.

Inorganic Methods

No Action -	The sample result is greater than the CRDL and greater than five times (5X) the blank value.
B -	The sample result is greater than or equal to the MDL but less than or equal to the CRQL, result is reported as non-detect at the CRQL.
L/UL-	The sample result is ≤10X the analyte IDL and the blank result is negative in several blanks (>|-IDL| but <|-CRDL|).

General Abbreviations

RL	reporting limit
Q code	qualifier code
+	positive result
-	non-detect result IDL
IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High Moisture content

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS30-DW01-0808 | Lab Sample ID: 680-39198-1

Matrix: Water | Lab File ID: a0131.d

Analysis Method: OLM04.3/Vol | Date Received: 08/06/2008 08:51

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 22:18

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

LM 092708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS30-DW01-0808
Lab Sample ID: 680-39198-1
Matrix: Water
Lab File ID: a0131.d
Analysis Method: OLM04.3/Vol
Date Received: 08/06/2008 08:51
Sample wt/vol: 5(mL)
Date Analyzed: 08/12/2008 22:18
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: DB-624 ID: 0.18(mm)
% Moisture:
Level: (low/med) Low
Analy. Batch No.: 114380
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94	76-114	
460-00-4	4-Bromofluorobenzene	93	86-115	
2037-26-5	Toluene-d8 (Surr)	100	88-110	

VM 082708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS30-DW01-0808 | Lab Sample ID: 680-39198-1

Matrix: Water | Lab File ID: a0131.d

Analysis Method: OLM04.3/Vol | Date Received: 08/06/2008 08:51

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 22:18

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

UN 092708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS30-TB01-080508 | Lab Sample ID: 680-39198-2

Matrix: Water | Lab File ID: a0132.d

Analysis Method: OLM04.3/Vol | Date Received: 08/06/2008 08:51

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 22:40

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

VM 09/2/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS30-TB01-080508 | Lab Sample ID: 680-39198-2

Matrix: Water | Lab File ID: a0132.d

Analysis Method: OLM04.3/Vol | Date Received: 08/06/2008 08:51

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 22:40

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94	76-114	
460-00-4	4-Bromofluorobenzene	93	86-115	
2037-26-5	Toluene-d8 (Surr)	97	88-110	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS30-TB01-080508 Lab Sample ID: 680-39198-2

Matrix: Water Lab File ID: a0132.d

Analysis Method: OLM04.3/Vol Date Received: 08/06/2008 08:51

Sample wt/vol: 5(mL) Date Analyzed: 08/12/2008 22:40

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analy. Batch No.: 114380 Units: ug/L

Number TICs Found: 0 TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW07-0808 | Lab Sample ID: 680-39416-1

Matrix: Water | Lab File ID: a0133.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 23:01

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	3.7	J	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW07-0808 | Lab Sample ID: 680-39416-1

Matrix: Water | Lab File ID: a0133.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 23:01

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94	76-114	
460-00-4	4-Bromofluorobenzene	95	86-115	
2037-26-5	Toluene-d8 (Surr)	98	88-110	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW07-0808 | Lab Sample ID: 680-39416-1

Matrix: Water | Lab File ID: a0133.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 23:01

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

Number TICs Found: 1 | TIC Total: 7.4

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown	2.16	7.4	

09/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-EB01-081108 | Lab Sample ID: 680-39416-2
Matrix: Water | Lab File ID: a0134.d
Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58
Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 23:23
Soil Aliquot Vol: | Dilution Factor: 1
Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)
% Moisture: | Level: (low/med) Low
Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

UW 09/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081108 | Lab Sample ID: 680-39416-2

Matrix: Water | Lab File ID: a0134.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 23:23

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	96	76-114	
460-00-4	4-Bromofluorobenzene	94	86-115	
2037-26-5	Toluene-d8 (Surr)	97	88-110	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081108 | Lab Sample ID: 680-39416-2

Matrix: Water | Lab File ID: a0134.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 23:23

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

LM 08/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-FB01-081108 | Lab Sample ID: 680-39416-3

Matrix: Water | Lab File ID: a0135.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 23:45

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

VR 8/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-FB01-081108 | Lab Sample ID: 680-39416-3

Matrix: Water | Lab File ID: a0135.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/12/2008 23:45

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94	76-114	
460-00-4	4-Bromofluorobenzene	95	86-115	
2037-26-5	Toluene-d8 (Surr)	98	88-110	

MM 092708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-FB01-081108 Lab Sample ID: 680-39416-3
Matrix: Water Lab File ID: a0135.d
Analysis Method: OLM04.3/Vol Date Received: 08/12/2008 08:58
Sample wt/vol: 5(mL) Date Analyzed: 08/12/2008 23:45
Soil Aliquot Vol: Dilution Factor: 1
Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)
% Moisture: Level: (low/med) Low
Analy. Batch No.: 114380 Units: ug/L
Number TICs Found: 0 TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

FORM I-TIC OLM04.3/Vol

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09-0808 | Lab Sample ID: 680-39416-4

Matrix: Water | Lab File ID: a0136.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 00:07

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

UM 08/20/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW09-0808
Lab Sample ID: 680-39416-4
Matrix: Water
Lab File ID: a0136.d
Analysis Method: OLM04.3/Vol
Date Received: 08/12/2008 08:58
Sample wt/vol: 5(mL)
Date Analyzed: 08/13/2008 00:07
Soil Aliquot Vol:
Dilution Factor: 1
Soil Extract Vol.:
GC Column: DB-624 ID: 0.18(mm)
% Moisture:
Level: (low/med) Low
Analy. Batch No.: 114380
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99	76-114	
460-00-4	4-Bromofluorobenzene	97	86-115	
2037-26-5	Toluene-d8 (Surr)	99	88-110	

UPS 092708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09-0808 Lab Sample ID: 680-39416-4

Matrix: Water Lab File ID: a0136.d

Analysis Method: OLM04.3/Vol Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) Date Analyzed: 08/13/2008 00:07

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analy. Batch No.: 114380 Units: ug/L

Number TICs Found: 0 TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

MM 09/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09P-0808 | Lab Sample ID: 680-39416-5

Matrix: Water | Lab File ID: a0137.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 00:28

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09P-0808 | Lab Sample ID: 680-39416-5

Matrix: Water | Lab File ID: a0137.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 00:28

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	96	76-114	
460-00-4	4-Bromofluorobenzene	94	86-115	
2037-26-5	Toluene-d8 (Surr)	97	88-110	

UM 09/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09P-0808 Lab Sample ID: 680-39416-5

Matrix: Water Lab File ID: a0137.d

Analysis Method: OLM04.3/Vol Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) Date Analyzed: 08/13/2008 00:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analy. Batch No.: 114380 Units: ug/L

Number TICs Found: 0 TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

FORM I-TIC OLM04.3/Vol

MM 09/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 | Lab Sample ID: 680-39416-6

Matrix: Water | Lab File ID: a0138.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 00:50

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

W 092708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 | Lab Sample ID: 680-39416-6

Matrix: Water | Lab File ID: a0138.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 00:50

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	96	76-114	
460-00-4	4-Bromofluorobenzene	96	86-115	
2037-26-5	Toluene-d8 (Surr)	99	88-110	

VM 09/2/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 | Lab Sample ID: 680-39416-6

Matrix: Water | Lab File ID: a0138.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 00:50

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

FORM I-TIC OLM04.3/Vol

VM 08/22/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-TB01-081108 | Lab Sample ID: 680-39416-7

Matrix: Water | Lab File ID: a0143.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 02:39

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

WM 09/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-TB01-081108 | Lab Sample ID: 680-39416-7

Matrix: Water | Lab File ID: a0143.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 02:39

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97	76-114	
460-00-4	4-Bromofluorobenzene	93	86-115	
2037-26-5	Toluene-d8 (Surr)	96	88-110	

UM 042708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW08-0808 | Lab Sample ID: 680-39523-1

Matrix: Water | Lab File ID: a0145.d

Analysis Method: OLM04.3/Vol | Date Received: 08/14/2008 08:55

Sample wt/vol: 5(mL) | Date Analyzed: 08/15/2008 20:02

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114606 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

VM 09/28/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW08-0808 | Lab Sample ID: 680-39523-1
Matrix: Water | Lab File ID: a0145.d
Analysis Method: OLM04.3/Vol | Date Received: 08/14/2008 08:55
Sample wt/vol: 5(mL) | Date Analyzed: 08/15/2008 20:02
Soil Aliquot Vol: | Dilution Factor: 1
Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)
% Moisture: | Level: (low/med) Low
Analy. Batch No.: 114606 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	7.4	J	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99	76-114	
460-00-4	4-Bromofluorobenzene	98	86-115	
2037-26-5	Toluene-d8 (Surr)	101	88-110	

VM 09/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW08-0808 | Lab Sample ID: 680-39523-1

Matrix: Water | Lab File ID: a0145.d

Analysis Method: OLM04.3/Vol | Date Received: 08/14/2008 08:55

Sample wt/vol: 5(mL) | Date Analyzed: 08/15/2008 20:02

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114606 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

MM 09/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-TB01-081308 | Lab Sample ID: 680-39523-2

Matrix: Water | Lab File ID: a0146.d

Analysis Method: OLM04.3/Vol | Date Received: 08/14/2008 08:55

Sample wt/vol: 5(mL) | Date Analyzed: 08/15/2008 20:35

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114606 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

LMS 8/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-TB01-081308 | Lab Sample ID: 680-39523-2
Matrix: Water | Lab File ID: a0146.d
Analysis Method: OLM04.3/Vol | Date Received: 08/14/2008 08:55
Sample wt/vol: 5(mL) | Date Analyzed: 08/15/2008 20:35
Soil Aliquot Vol: | Dilution Factor: 1
Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)
% Moisture: | Level: (low/med) Low
Analy. Batch No.: 114606 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	96	76-114	
460-00-4	4-Bromofluorobenzene	99	86-115	
2037-26-5	Toluene-d8 (Surr)	100	88-110	

UM 09/27/08

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-TB01-081308 Lab Sample ID: 680-39523-2

Matrix: Water Lab File ID: a0146.d

Analysis Method: OLM04.3/Vol Date Received: 08/14/2008 08:55

Sample wt/vol: 5(mL) Date Analyzed: 08/15/2008 20:35

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analy. Batch No.: 114606 Units: ug/L

Number TICs Found: 0 TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081308 | Lab Sample ID: 680-39523-3

Matrix: Water | Lab File ID: a0147.d

Analysis Method: OLM04.3/Vol | Date Received: 08/14/2008 08:55

Sample wt/vol: 5(mL) | Date Analyzed: 08/15/2008 20:56

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114606 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	10	U	10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	10	U	10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	10	U	10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081308 | Lab Sample ID: 680-39523-3

Matrix: Water | Lab File ID: a0147.d

Analysis Method: OLM04.3/Vol | Date Received: 08/14/2008 08:55

Sample wt/vol: 5(mL) | Date Analyzed: 08/15/2008 20:56

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114606 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	10	U	10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	10	U	10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97	76-114	
460-00-4	4-Bromofluorobenzene	96	86-115	
2037-26-5	Toluene-d8 (Surr)	100	88-110	

UM 092708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081308 | Lab Sample ID: 680-39523-3

Matrix: Water | Lab File ID: a0147.d

Analysis Method: OLM04.3/Vol | Date Received: 08/14/2008 08:55

Sample wt/vol: 5(mL) | Date Analyzed: 08/15/2008 20:56

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114606 | Units: ug/L

Number TICs Found: 0 | TIC Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Tentatively Identified Compound		None	

VM 092708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 MS | Lab Sample ID: 680-39416-6 MS

Matrix: Water | Lab File ID: a0139.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 01:12

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	72		10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	52		10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	50		10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

VM 092708

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 MS | Lab Sample ID: 680-39416-6 MS

Matrix: Water | Lab File ID: a0139.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 01:12

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	51		10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	53		10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	96	76-114	
460-00-4	4-Bromofluorobenzene	91	86-115	
2037-26-5	Toluene-d8 (Surr)	99	88-110	

VM 091208

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 MSD | Lab Sample ID: 680-39416-6 MSD

Matrix: Water | Lab File ID: a0140.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 01:34

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	10	U	10	0.39
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	0.26
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	0.35
79-00-5	1,1,2-Trichloroethane	10	U	10	0.51
75-34-3	1,1-Dichloroethane	10	U	10	0.32
75-35-4	1,1-Dichloroethene	73		10	0.36
120-82-1	1,2,4-Trichlorobenzene	10	U	10	0.35
96-12-8	1,2-Dibromo-3-Chloropropane	10	U	10	0.48
95-50-1	1,2-Dichlorobenzene	10	U	10	0.33
107-06-2	1,2-Dichloroethane	10	U	10	0.31
78-87-5	1,2-Dichloropropane	10	U	10	0.36
541-73-1	1,3-Dichlorobenzene	10	U	10	0.31
106-46-7	1,4-Dichlorobenzene	10	U	10	0.33
78-93-3	2-Butanone (MEK)	10	U	10	0.60
591-78-6	2-Hexanone	10	U	10	0.68
108-10-1	4-Methyl-2-pentanone (MIBK)	10	U	10	0.60
67-64-1	Acetone	10	U	10	1.7
71-43-2	Benzene	53		10	0.32
75-25-2	Bromoform	10	U	10	0.41
74-83-9	Bromomethane	10	U	10	0.50
75-15-0	Carbon disulfide	10	U	10	0.17
56-23-5	Carbon tetrachloride	10	U	10	0.27
108-90-7	Chlorobenzene	53		10	0.34
124-48-1	Chlorodibromomethane	10	U	10	0.30
75-00-3	Chloroethane	10	U	10	1.0
67-66-3	Chloroform	10	U	10	0.29
74-87-3	Chloromethane	10	U	10	0.28
156-59-2	cis-1,2-Dichloroethene	10	U	10	0.33
10061-01-5	cis-1,3-Dichloropropene	10	U	10	0.37
110-82-7	Cyclohexane	10	U	10	1.0
75-27-4	Dichlorobromomethane	10	U	10	0.34
75-71-8	Dichlorodifluoromethane	10	U	10	0.33
100-41-4	Ethylbenzene	10	U	10	0.30
106-93-4	Ethylene Dibromide	10	U	10	0.30
98-82-8	Isopropylbenzene	10	U	10	0.27

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 MSD | Lab Sample ID: 680-39416-6 MSD

Matrix: Water | Lab File ID: a0140.d

Analysis Method: OLM04.3/Vol | Date Received: 08/12/2008 08:58

Sample wt/vol: 5(mL) | Date Analyzed: 08/13/2008 01:34

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analy. Batch No.: 114380 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-20-9	Methyl acetate	10	U	10	0.42
1634-04-4	Methyl tert-butyl ether	10	U	10	0.58
108-87-2	Methylcyclohexane	10	U	10	0.25
75-09-2	Methylene Chloride	10	U	10	1.0
100-42-5	Styrene	10	U	10	0.36
127-18-4	Tetrachloroethene	10	U	10	0.28
108-88-3	Toluene	53		10	0.31
156-60-5	trans-1,2-Dichloroethene	10	U	10	0.30
10061-02-6	trans-1,3-Dichloropropene	10	U	10	0.27
79-01-6	Trichloroethene	54		10	0.40
75-69-4	Trichlorofluoromethane	10	U	10	0.29
75-01-4	Vinyl chloride	10	U	10	0.20
1330-20-7	Xylenes, Total	10	U	10	0.87

CAS NO.	SURROGATE	%REC	LIMITS	Q
17060-07-0	1,2-Dichloroethane-d4 (Surr)	96	76-114	
460-00-4	4-Bromofluorobenzene	94	86-115	
2037-26-5	Toluene-d8 (Surr)	98	88-110	

VM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW07-0808
Lab Sample ID: 680-39416-1
Matrix: Water
Lab File ID: e4906.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1060(mL)
Date Analyzed: 08/14/2008 18:46
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.4	U	9.4	9.4
108-60-1	2,2'-oxybis(1-chloropropane)	9.4	U	9.4	9.4
95-95-4	2,4,5-Trichlorophenol	9.4	U	9.4	9.4
88-06-2	2,4,6-Trichlorophenol	9.4	U	9.4	9.4
120-83-2	2,4-Dichlorophenol	9.4	U	9.4	9.4
105-67-9	2,4-Dimethylphenol	9.4	U	9.4	9.4
51-28-5	2,4-Dinitrophenol	47	U	47	47
121-14-2	2,4-Dinitrotoluene	9.4	U	9.4	9.4
606-20-2	2,6-Dinitrotoluene	9.4	U	9.4	9.4
91-58-7	2-Chloronaphthalene	9.4	U	9.4	9.4
95-57-8	2-Chlorophenol	9.4	U	9.4	9.4
95-48-7	2-Methylphenol	9.4	U	9.4	9.4
88-74-4	2-Nitroaniline	47	U	47	47
88-75-5	2-Nitrophenol	9.4	U	9.4	9.4
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	47	U	47	47
534-52-1	4,6-Dinitro-2-methylphenol	47	U	47	47
101-55-3	4-Bromophenyl phenyl ether	9.4	U	9.4	9.4
59-50-7	4-Chloro-3-methylphenol	9.4	U	9.4	9.4
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.4	U	9.4	9.4
106-44-5	4-Methylphenol	9.4	U	9.4	9.4
100-01-6	4-Nitroaniline	47	U	47	47
100-02-7	4-Nitrophenol	47	U	47	47
83-32-9	Acenaphthene	9.4	U	9.4	9.4
208-96-8	Acenaphthylene	9.4	U	9.4	9.4
98-86-2	Acetophenone	9.4	U	9.4	9.4
120-12-7	Anthracene	9.4	U	9.4	9.4
1912-24-9	Atrazine	9.4	U	9.4	9.4
100-52-7	Benzaldehyde	9.4	U	9.4	9.4
56-55-3	Benzo(a)anthracene	9.4	U	9.4	9.4
50-32-8	Benzo(a)pyrene	9.4	U	9.4	9.4
205-99-2	Benzo(b)fluoranthene	9.4	U	9.4	9.4
191-24-2	Benzo(g,h,i)perylene	9.4	U	9.4	9.4

UM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW07-0808
Lab Sample ID: 680-39416-1
Matrix: Water
Lab File ID: e4906.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1060(mL)
Date Analyzed: 08/14/2008 18:46
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	9.4	U	9.4	9.4
111-91-1	Bis(2-chloroethoxy)methane	9.4	U	9.4	9.4
111-44-4	Bis(2-chloroethyl)ether	9.4	U	9.4	9.4
117-81-7	Bis(2-ethylhexyl) phthalate	9.4	U	9.4	9.4
85-68-7	Butyl benzyl phthalate	9.4	U	9.4	9.4
105-60-2	Caprolactam	9.4	U	9.4	9.4
86-74-8	Carbazole	9.4	U	9.4	9.4
218-01-9	Chrysene	9.4	U	9.4	9.4
53-70-3	Dibenz(a,h)anthracene	9.4	U	9.4	9.4
132-64-9	Dibenzofuran	9.4	U	9.4	9.4
84-66-2	Diethyl phthalate	9.4	U	9.4	9.4
131-11-3	Dimethyl phthalate	9.4	U	9.4	9.4
84-74-2	Di-n-butyl phthalate	9.4	U	9.4	9.4
117-84-0	Di-n-octyl phthalate	9.4	U	9.4	9.4
206-44-0	Fluoranthene	9.4	U	9.4	9.4
86-73-7	Fluorene	9.4	U	9.4	9.4
118-74-1	Hexachlorobenzene	9.4	U	9.4	9.4
87-68-3	Hexachlorobutadiene	9.4	U	9.4	9.4
77-47-4	Hexachlorocyclopentadiene	9.4	U	9.4	9.4
67-72-1	Hexachloroethane	9.4	U	9.4	9.4
193-39-5	Indeno[1,2,3-cd]pyrene	9.4	U	9.4	9.4
78-59-1	Isophorone	9.4	U	9.4	9.4
91-20-3	Naphthalene	9.4	U	9.4	9.4
98-95-3	Nitrobenzene	9.4	U	9.4	9.4
621-64-7	N-Nitrosodi-n-propylamine	9.4	U	9.4	9.4
86-30-6	N-Nitrosodiphenylamine	9.4	U	9.4	9.4
87-86-5	Pentachlorophenol	47	U	47	47
85-01-8	Phenanthrene	9.4	U	9.4	9.4
108-95-2	Phenol	9.4	U	9.4	9.4
129-00-0	Pyrene	9.4	U	9.4	9.4

WM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW07-0808
Lab Sample ID: 680-39416-1
Matrix: Water
Lab File ID: e4906.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1060(mL)
Date Analyzed: 08/14/2008 18:46
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	57	16-110	
118-79-6	2,4,6-Tribromophenol	70	10-123	
93951-73-6	2-Chlorophenol-d4	66	33-110	
321-60-8	2-Fluorobiphenyl	71	43-116	
367-12-4	2-Fluorophenol	65	21-110	
4165-60-0	Nitrobenzene-d5	75	35-114	
4165-62-2	Phenol-d5	64	10-110	
1718-51-0	Terphenyl-d14	71	33-141	

UM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW07-0808 | Lab Sample ID: 680-39416-1

Matrix: Water | Lab File ID: e4906.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1060(mL) | Date Analyzed: 08/14/2008 18:46

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

Number TICs Found: 3 | TIC Total: 33.9

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown Aldol Condensate	3.31	26	~~N~~ BBL
87-41-2	1(3H)-Isobenzofuranone	6.96	2.4	N
134-62-3	Diethyltoluamide	7.99	5.5	N

FORM I-TIC OLM04.3/SV

8/22/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081108 | Lab Sample ID: 680-39416-2

Matrix: Water | Lab File ID: e4907.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 19:09

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis(1-chloropropane)	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo(a)anthracene	9.7	U	9.7	9.7
50-32-8	Benzo(a)pyrene	9.7	U	9.7	9.7
205-99-2	Benzo(b)fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo(g,h,i)perylene	9.7	U	9.7	9.7

UW 082708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081108 | Lab Sample ID: 680-39416-2

Matrix: Water | Lab File ID: e4907.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 19:09

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo(k)fluoranthene	9.7	U	9.7	9.7
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno(1,2,3-cd)pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

VM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-EB01-081108
Lab Sample ID: 680-39416-2
Matrix: Water
Lab File ID: e4907.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1030(mL)
Date Analyzed: 08/14/2008 19:09
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	60	16-110	
118-79-6	2,4,6-Tribromophenol	71	10-123	
93951-73-6	2-Chlorophenol-d4	69	33-110	
321-60-8	2-Fluorobiphenyl	72	43-116	
367-12-4	2-Fluorophenol	69	21-110	
4165-60-0	Nitrobenzene-d5	78	35-114	
4165-62-2	Phenol-d5	65	10-110	
1718-51-0	Terphenyl-d14	85	33-141	

WS 8/27/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-EB01-081108 | Lab Sample ID: 680-39416-2
Matrix: Water | Lab File ID: s4907.d
Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 19:09
Con. Extract Vol.: 1(mL) | Dilution Factor: 1
Injection Volume: 2(uL) | Level: (low/med) Low
% Moisture: | GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516 | Units: ug/L
Number TICs Found: 1 | TIC Total: 19

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown Aldol Condensate	3.31	19	A

FORM I-TIC OLM04.3/SV

VPP 09/27/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-FB01-081108
Lab Sample ID: 680-39416-3
Matrix: Water
Lab File ID: e4908.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1030(mL)
Date Analyzed: 08/14/2008 19:32
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7

VM 08/27/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-FB01-081108
Lab Sample ID: 680-39416-3
Matrix: Water
Lab File ID: e4908.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1030(mL)
Date Analyzed: 08/14/2008 19:32
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

CW 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-FB01-081108
Lab Sample ID: 680-39416-3
Matrix: Water
Lab File ID: e4908.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1030(mL)
Date Analyzed: 08/14/2008 19:32
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	61	16-110	
118-79-6	2,4,6-Tribromophenol	69	10-123	
93951-73-6	2-Chlorophenol-d4	69	33-110	
321-60-8	2-Fluorobiphenyl	76	43-116	
367-12-4	2-Fluorophenol	66	21-110	
4165-60-0	Nitrobenzene-d5	77	35-114	
4165-62-2	Phenol-d5	65	10-110	
1718-51-0	Terphenyl-d14	85	33-141	

VM 091208

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-FB01-081108 | Lab Sample ID: 680-39416-3
Matrix: Water | Lab File ID: e4908.d
Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 19:32
Con. Extract Vol.: 1(mL) | Dilution Factor: 1
Injection Volume: 2(uL) | Level: (low/med) Low
% Moisture: | GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516 | Units: ug/L
Number TICs Found: 1 | TIC Total: 20

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown Aldol Condensate	3.30	20	A

FORM I-TIC OLM04.3/SV

UN 692708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW09-0808
Lab Sample ID: 680-39416-4
Matrix: Water
Lab File ID: e4909.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1030(mL)
Date Analyzed: 08/14/2008 19:55
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7

VM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09-0808 | Lab Sample ID: 680-39416-4

Matrix: Water | Lab File ID: e4909.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 19:55

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

VMS 09270B

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09-0808 | Lab Sample ID: 680-39416-4

Matrix: Water | Lab File ID: e4909.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 19:55

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	56	16-110	
118-79-6	2,4,6-Tribromophenol	71	10-123	
93951-73-6	2-Chlorophenol-d4	67	33-110	
321-60-8	2-Fluorobiphenyl	67	43-116	
367-12-4	2-Fluorophenol	66	21-110	
4165-60-0	Nitrobenzene-d5	75	35-114	
4165-62-2	Phenol-d5	65	10-110	
1718-51-0	Terphenyl-d14	52	33-141	

VN 09/27/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09-0808 | Lab Sample ID: 680-39416-4

Matrix: Water | Lab File ID: e4909.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 19:55

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

Number TICs Found: 3 | TIC Total: 31.4

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown Aldol Condensate	3.31	20	~~A~~ BPL
	Unknown	4.83	6.1	
87-41-2	1(3H)-Isobenzofuranone	6.96	5.3	N

VM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW09P-0808 | Lab Sample ID: 680-39416-5
Matrix: Water | Lab File ID: e4910.d
Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 20:18
Con. Extract Vol.: 1(mL) | Dilution Factor: 1
Injection Volume: 2(uL) | Level: (low/med) Low
% Moisture: | GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis(1-chloropropane)	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09P-0808 | Lab Sample ID: 680-39416-5

Matrix: Water | Lab File ID: e4910.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 20:18

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

MM 09/27/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09P-0808 | Lab Sample ID: 680-39416-5

Matrix: Water | Lab File ID: e4910.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 20:18

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	53	16-110	
118-79-6	2,4,6-Tribromophenol	71	10-123	
93951-73-6	2-Chlorophenol-d4	65	33-110	
321-60-8	2-Fluorobiphenyl	66	43-116	
367-12-4	2-Fluorophenol	64	21-110	
4165-60-0	Nitrobenzene-d5	73	35-114	
4165-62-2	Phenol-d5	64	10-110	
1718-51-0	Terphenyl-d14	59	33-141	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09P-0808 | Lab Sample ID: 680-39416-5

Matrix: Water | Lab File ID: e4910.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 20:18

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

Number TICs Found: 4 | TIC Total: 29.9

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown Aldol Condensate	3.31	19	~~A~~ B,BL
	Unknown	4.83	4.3	
87-41-2	1(3H)-Isobenzofuranone	6.96	3.8	N
134-62-3	Diethyltoluamide	8.00	2.8	N

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW09A-0808
Lab Sample ID: 680-39416-6
Matrix: Water
Lab File ID: e4911.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1030(mL)
Date Analyzed: 08/14/2008 20:41
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7

MM 09/22/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 | Lab Sample ID: 680-39416-6

Matrix: Water | Lab File ID: e4911.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 20:41

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

MM 8/22/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 | Lab Sample ID: 680-39416-6

Matrix: Water | Lab File ID: e4911.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 20:41

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	51	16-110	
118-79-6	2,4,6-Tribromophenol	69	10-123	
93951-73-6	2-Chlorophenol-d4	62	33-110	
321-60-8	2-Fluorobiphenyl	66	43-116	
367-12-4	2-Fluorophenol	59	21-110	
4165-60-0	Nitrobenzene-d5	70	35-114	
4165-62-2	Phenol-d5	59	10-110	
1718-51-0	Terphenyl-d14	57	33-141	

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FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 | Lab Sample ID: 680-39416-6

Matrix: Water | Lab File ID: e4911.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 20:41

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

Number TICs Found: 4 | TIC Total: 34.2

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown Aldol Condensate	3.31	16	~~A~~ B,BL
	Unknown	4.83	11	
87-41-2	1(3H)-Isobenzofuranone	6.96	4.0	N
80-05-7	Phenol, 4,4''-(1-methylethylidene)bis-	10.18	3.2	N

FORM I-TIC OLM04.3/SV

VM 09/27/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW08-0808 | Lab Sample ID: 680-39523-1

Matrix: Water | Lab File ID: e4918.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 1030(mL) | Date Analyzed: 08/18/2008 12:59

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	9.7	U	9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	9.7	U	9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	9.7	U	9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	49	U	49	49
83-32-9	Acenaphthene	9.7	U	9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7

LMM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW08-0808 | Lab Sample ID: 680-39523-1
Matrix: Water | Lab File ID: e4918.d
Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55
Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48
Sample wt/vol: 1030(mL) | Date Analyzed: 08/18/2008 12:59
Con. Extract Vol.: 1(mL) | Dilution Factor: 1
Injection Volume: 2(uL) | Level: (low/med) Low
% Moisture: | GPC Cleanup:(Y/N) N
Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	9.7	U	9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	49	U	49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	9.7	U	9.7	9.7
129-00-0	Pyrene	9.7	U	9.7	9.7

WR 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW08-0808 | Lab Sample ID: 680-39523-1

Matrix: Water | Lab File ID: e4918.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 1030(mL) | Date Analyzed: 08/18/2008 12:59

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	63	16-110	
118-79-6	2,4,6-Tribromophenol	80	10-123	
93951-73-6	2-Chlorophenol-d4	79	33-110	
321-60-8	2-Fluorobiphenyl	81	43-116	
367-12-4	2-Fluorophenol	79	21-110	
4165-60-0	Nitrobenzene-d5	90	35-114	
4165-62-2	Phenol-d5	76	10-110	
1718-51-0	Terphenyl-d14	79	33-141	

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW08-0808 | Lab Sample ID: 680-39523-1

Matrix: Water | Lab File ID: e4918.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 1030(mL) | Date Analyzed: 08/18/2008 12:59

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

Number TICs Found: 5 | TIC Total: 54.5

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown Aldol Condensate	3.30	31	~~A~~ B,BL
	Unknown	6.43	2.0	
118-96-7	Benzene, 2-methyl-1,3,5-trinitro-	8.49	14	N
	Unknown	9.32	3.7	
	Unknown	10.48	3.8	

FORM I-TIC OLM04.3/SV

WW 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081308 | Lab Sample ID: 680-39523-3

Matrix: Water | Lab File ID: e4916.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 980(mL) | Date Analyzed: 08/18/2008 12:13

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	10	U	10	10
108-60-1	2,2'-oxybis[1-chloropropane]	10	U	10	10
95-95-4	2,4,5-Trichlorophenol	10	U	10	10
88-06-2	2,4,6-Trichlorophenol	10	U	10	10
120-83-2	2,4-Dichlorophenol	10	U	10	10
105-67-9	2,4-Dimethylphenol	10	U	10	10
51-28-5	2,4-Dinitrophenol	51	U	51	51
121-14-2	2,4-Dinitrotoluene	10	U	10	10
606-20-2	2,6-Dinitrotoluene	10	U	10	10
91-58-7	2-Chloronaphthalene	10	U	10	10
95-57-8	2-Chlorophenol	10	U	10	10
95-48-7	2-Methylphenol	10	U	10	10
88-74-4	2-Nitroaniline	51	U	51	51
88-75-5	2-Nitrophenol	10	U	10	10
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	51	U	51	51
534-52-1	4,6-Dinitro-2-methylphenol	51	U	51	51
101-55-3	4-Bromophenyl phenyl ether	10	U	10	10
59-50-7	4-Chloro-3-methylphenol	10	U	10	10
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	10	U	10	10
106-44-5	4-Methylphenol	10	U	10	10
100-01-6	4-Nitroaniline	51	U	51	51
100-02-7	4-Nitrophenol	51	U	51	51
83-32-9	Acenaphthene	10	U	10	10
208-96-8	Acenaphthylene	10	U	10	10
98-86-2	Acetophenone	10	U	10	10
120-12-7	Anthracene	10	U	10	10
1912-24-9	Atrazine	10	U	10	10
100-52-7	Benzaldehyde	10	U	10	10
56-55-3	Benzo[a]anthracene	10	U	10	10
50-32-8	Benzo[a]pyrene	10	U	10	10
205-99-2	Benzo[b]fluoranthene	10	U	10	10
191-24-2	Benzo[g,h,i]perylene	10	U	10	10

MW 09/2/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081308 | Lab Sample ID: 680-39523-3

Matrix: Water | Lab File ID: e4916.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 980(mL) | Date Analyzed: 08/18/2008 12:13

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup: (Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	10	U	10	10
111-91-1	Bis(2-chloroethoxy)methane	10	U	10	10
111-44-4	Bis(2-chloroethyl)ether	10	U	10	10
117-81-7	Bis(2-ethylhexyl) phthalate	10	U	10	10
85-68-7	Butyl benzyl phthalate	10	U	10	10
105-60-2	Caprolactam	10	U	10	10
86-74-8	Carbazole	10	U	10	10
218-01-9	Chrysene	10	U	10	10
53-70-3	Dibenz(a,h)anthracene	10	U	10	10
132-64-9	Dibenzofuran	10	U	10	10
84-66-2	Diethyl phthalate	10	U	10	10
131-11-3	Dimethyl phthalate	10	U	10	10
84-74-2	Di-n-butyl phthalate	10	U	10	10
117-84-0	Di-n-octyl phthalate	10	U	10	10
206-44-0	Fluoranthene	10	U	10	10
86-73-7	Fluorene	10	U	10	10
118-74-1	Hexachlorobenzene	10	U	10	10
87-68-3	Hexachlorobutadiene	10	U	10	10
77-47-4	Hexachlorocyclopentadiene	10	U	10	10
67-72-1	Hexachloroethane	10	U	10	10
193-39-5	Indeno[1,2,3-cd]pyrene	10	U	10	10
78-59-1	Isophorone	10	U	10	10
91-20-3	Naphthalene	10	U	10	10
98-95-3	Nitrobenzene	10	U	10	10
621-64-7	N-Nitrosodi-n-propylamine	10	U	10	10
86-30-6	N-Nitrosodiphenylamine	10	U	10	10
87-86-5	Pentachlorophenol	51	U	51	51
85-01-8	Phenanthrene	10	U	10	10
108-95-2	Phenol	10	U	10	10
129-00-0	Pyrene	10	U	10	10

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-EB01-081308 | Lab Sample ID: 680-39523-3

Matrix: Water | Lab File ID: e4916.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 980(mL) | Date Analyzed: 08/18/2008 12:13

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	57	16-110	
118-79-6	2,4,6-Tribromophenol	76	10-123	
93951-73-6	2-Chlorophenol-d4	72	33-110	
321-60-8	2-Fluorobiphenyl	72	43-116	
367-12-4	2-Fluorophenol	73	21-110	
4165-60-0	Nitrobenzene-d5	81	35-114	
4165-62-2	Phenol-d5	70	10-110	
1718-51-0	Terphenyl-d14	82	33-141	

WM 09/27/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-EB01-081308
Lab Sample ID: 680-39523-3
Matrix: Water
Lab File ID: e4916.d
Analysis Method: OLM04.3/SV
Date Received: 08/14/2008 08:55
Extract. Method: OLM04.3/SV
Date Extracted: 08/15/2008 13:48
Sample wt/vol: 980(mL)
Date Analyzed: 08/18/2008 12:13
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup: (Y/N) N
Analy. Batch No.: 114843
Units: ug/L
Number TICs Found: 1
TIC Total: 25

CAS NO.	COMPOUND NAME	RT	RESULT	Q
	Unknown Aldol Condensate	3.30	25	A

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 MS | Lab Sample ID: 680-39416-6 MS

Matrix: Water | Lab File ID: e4912.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 21:05

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.7	U	9.7	9.7
108-60-1	2,2'-oxybis[1-chloropropane]	9.7	U	9.7	9.7
95-95-4	2,4,5-Trichlorophenol	9.7	U	9.7	9.7
88-06-2	2,4,6-Trichlorophenol	9.7	U	9.7	9.7
120-83-2	2,4-Dichlorophenol	9.7	U	9.7	9.7
105-67-9	2,4-Dimethylphenol	9.7	U	9.7	9.7
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	34		9.7	9.7
606-20-2	2,6-Dinitrotoluene	9.7	U	9.7	9.7
91-58-7	2-Chloronaphthalene	9.7	U	9.7	9.7
95-57-8	2-Chlorophenol	44		9.7	9.7
95-48-7	2-Methylphenol	9.7	U	9.7	9.7
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.7	U	9.7	9.7
91-94-1	3,3'-Dichlorobenzidine	19	U	19	19
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.7	U	9.7	9.7
59-50-7	4-Chloro-3-methylphenol	53		9.7	9.7
106-47-8	4-Chloroaniline	19	U	19	19
7005-72-3	4-Chlorophenyl phenyl ether	9.7	U	9.7	9.7
106-44-5	4-Methylphenol	9.7	U	9.7	9.7
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	54		49	49
83-32-9	Acenaphthene	32		9.7	9.7
208-96-8	Acenaphthylene	9.7	U	9.7	9.7
98-86-2	Acetophenone	9.7	U	9.7	9.7
120-12-7	Anthracene	9.7	U	9.7	9.7
1912-24-9	Atrazine	9.7	U	9.7	9.7
100-52-7	Benzaldehyde	9.7	U	9.7	9.7
56-55-3	Benzo[a]anthracene	9.7	U	9.7	9.7
50-32-8	Benzo[a]pyrene	9.7	U	9.7	9.7
205-99-2	Benzo[b]fluoranthene	9.7	U	9.7	9.7
191-24-2	Benzo[g,h,i]perylene	9.7	U	9.7	9.7

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 MS | Lab Sample ID: 680-39416-6 MS

Matrix: Water | Lab File ID: e4912.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 21:05

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	9.7	U	9.7	9.7
111-91-1	Bis(2-chloroethoxy)methane	9.7	U	9.7	9.7
111-44-4	Bis(2-chloroethyl)ether	9.7	U	9.7	9.7
117-81-7	Bis(2-ethylhexyl) phthalate	9.7	U	9.7	9.7
85-68-7	Butyl benzyl phthalate	9.7	U	9.7	9.7
105-60-2	Caprolactam	9.7	U	9.7	9.7
86-74-8	Carbazole	9.7	U	9.7	9.7
218-01-9	Chrysene	9.7	U	9.7	9.7
53-70-3	Dibenz(a,h)anthracene	9.7	U	9.7	9.7
132-64-9	Dibenzofuran	9.7	U	9.7	9.7
84-66-2	Diethyl phthalate	9.7	U	9.7	9.7
131-11-3	Dimethyl phthalate	9.7	U	9.7	9.7
84-74-2	Di-n-butyl phthalate	9.7	U	9.7	9.7
117-84-0	Di-n-octyl phthalate	9.7	U	9.7	9.7
206-44-0	Fluoranthene	9.7	U	9.7	9.7
86-73-7	Fluorene	9.7	U	9.7	9.7
118-74-1	Hexachlorobenzene	9.7	U	9.7	9.7
87-68-3	Hexachlorobutadiene	9.7	U	9.7	9.7
77-47-4	Hexachlorocyclopentadiene	9.7	U	9.7	9.7
67-72-1	Hexachloroethane	9.7	U	9.7	9.7
193-39-5	Indeno[1,2,3-cd]pyrene	9.7	U	9.7	9.7
78-59-1	Isophorone	9.7	U	9.7	9.7
91-20-3	Naphthalene	9.7	U	9.7	9.7
98-95-3	Nitrobenzene	9.7	U	9.7	9.7
621-64-7	N-Nitrosodi-n-propylamine	34		9.7	9.7
86-30-6	N-Nitrosodiphenylamine	9.7	U	9.7	9.7
87-86-5	Pentachlorophenol	59		49	49
85-01-8	Phenanthrene	9.7	U	9.7	9.7
108-95-2	Phenol	43		9.7	9.7
129-00-0	Pyrene	37		9.7	9.7

VM 8/12/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW09A-0808 MS | Lab Sample ID: 680-39416-6 MS

Matrix: Water | Lab File ID: e4912.d

Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58

Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18

Sample wt/vol: 1030(mL) | Date Analyzed: 08/14/2008 21:05

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	54	16-110	
118-79-6	2,4,6-Tribromophenol	72	10-123	
93951-73-6	2-Chlorophenol-d4	61	33-110	
321-60-8	2-Fluorobiphenyl	69	43-116	
367-12-4	2-Fluorophenol	57	21-110	
4165-60-0	Nitrobenzene-d5	70	35-114	
4165-62-2	Phenol-d5	57	10-110	
1718-51-0	Terphenyl-d14	57	33-141	

WP 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW09A-0808 MSD
Lab Sample ID: 680-39416-6 MSD
Matrix: Water
Lab File ID: e4913.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1020(mL)
Date Analyzed: 08/14/2008 21:28
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	9.8	U	9.8	9.8
108-60-1	2,2'-oxybis[1-chloropropane]	9.8	U	9.8	9.8
95-95-4	2,4,5-Trichlorophenol	9.8	U	9.8	9.8
88-06-2	2,4,6-Trichlorophenol	9.8	U	9.8	9.8
120-83-2	2,4-Dichlorophenol	9.8	U	9.8	9.8
105-67-9	2,4-Dimethylphenol	9.8	U	9.8	9.8
51-28-5	2,4-Dinitrophenol	49	U	49	49
121-14-2	2,4-Dinitrotoluene	36		9.8	9.8
606-20-2	2,6-Dinitrotoluene	9.8	U	9.8	9.8
91-58-7	2-Chloronaphthalene	9.8	U	9.8	9.8
95-57-8	2-Chlorophenol	52		9.8	9.8
95-48-7	2-Methylphenol	9.8	U	9.8	9.8
88-74-4	2-Nitroaniline	49	U	49	49
88-75-5	2-Nitrophenol	9.8	U	9.8	9.8
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	49	U	49	49
534-52-1	4,6-Dinitro-2-methylphenol	49	U	49	49
101-55-3	4-Bromophenyl phenyl ether	9.8	U	9.8	9.8
59-50-7	4-Chloro-3-methylphenol	58		9.8	9.8
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	9.8	U	9.8	9.8
106-44-5	4-Methylphenol	9.8	U	9.8	9.8
100-01-6	4-Nitroaniline	49	U	49	49
100-02-7	4-Nitrophenol	55		49	49
83-32-9	Acenaphthene	35		9.8	9.8
208-96-8	Acenaphthylene	9.8	U	9.8	9.8
98-86-2	Acetophenone	9.8	U	9.8	9.8
120-12-7	Anthracene	9.8	U	9.8	9.8
1912-24-9	Atrazine	9.8	U	9.8	9.8
100-52-7	Benzaldehyde	9.8	U	9.8	9.8
56-55-3	Benzo[a]anthracene	9.8	U	9.8	9.8
50-32-8	Benzo[a]pyrene	9.8	U	9.8	9.8
205-99-2	Benzo[b]fluoranthene	9.8	U	9.8	9.8
191-24-2	Benzo[g,h,i]perylene	9.8	U	9.8	9.8

UM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW09A-0808 MSD | Lab Sample ID: 680-39416-6 MSD
Matrix: Water | Lab File ID: e4913.d
Analysis Method: OLM04.3/SV | Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV | Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1020(mL) | Date Analyzed: 08/14/2008 21:28
Con. Extract Vol.: 1(mL) | Dilution Factor: 1
Injection Volume: 2(uL) | Level: (low/med) Low
% Moisture: | GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	9.8	U	9.8	9.8
111-91-1	Bis(2-chloroethoxy)methane	9.8	U	9.8	9.8
111-44-4	Bis(2-chloroethyl)ether	20		9.8	9.8
117-81-7	Bis(2-ethylhexyl) phthalate	9.8	U	9.8	9.8
85-68-7	Butyl benzyl phthalate	9.8	U	9.8	9.8
105-60-2	Caprolactam	9.8	U	9.8	9.8
86-74-8	Carbazole	9.8	U	9.8	9.8
218-01-9	Chrysene	9.8	U	9.8	9.8
53-70-3	Dibenz(a,h)anthracene	9.8	U	9.8	9.8
132-64-9	Dibenzofuran	9.8	U	9.8	9.8
84-66-2	Diethyl phthalate	9.8	U	9.8	9.8
131-11-3	Dimethyl phthalate	9.8	U	9.8	9.8
84-74-2	Di-n-butyl phthalate	9.8	U	9.8	9.8
117-84-0	Di-n-octyl phthalate	9.8	U	9.8	9.8
206-44-0	Fluoranthene	9.8	U	9.8	9.8
86-73-7	Fluorene	9.8	U	9.8	9.8
118-74-1	Hexachlorobenzene	9.8	U	9.8	9.8
87-68-3	Hexachlorobutadiene	9.8	U	9.8	9.8
77-47-4	Hexachlorocyclopentadiene	9.8	U	9.8	9.8
67-72-1	Hexachloroethane	9.8	U	9.8	9.8
193-39-5	Indeno[1,2,3-cd]pyrene	9.8	U	9.8	9.8
78-59-1	Isophorone	9.8	U	9.8	9.8
91-20-3	Naphthalene	9.8	U	9.8	9.8
98-95-3	Nitrobenzene	9.8	U	9.8	9.8
621-64-7	N-Nitrosodi-n-propylamine	36		9.8	9.8
86-30-6	N-Nitrosodiphenylamine	9.8	U	9.8	9.8
87-86-5	Pentachlorophenol	62		49	49
85-01-8	Phenanthrene	9.8	U	9.8	9.8
108-95-2	Phenol	50		9.8	9.8
129-00-0	Pyrene	40		9.8	9.8

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW09A-0808 MSD
Lab Sample ID: 680-39416-6 MSD
Matrix: Water
Lab File ID: e4913.d
Analysis Method: OLM04.3/SV
Date Received: 08/12/2008 08:58
Extract. Method: OLM04.3/SV
Date Extracted: 08/13/2008 13:18
Sample wt/vol: 1020(mL)
Date Analyzed: 08/14/2008 21:28
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114516
Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	62	16-110	
118-79-6	2,4,6-Tribromophenol	75	10-123	
93951-73-6	2-Chlorophenol-d4	70	33-110	
321-60-8	2-Fluorobiphenyl	74	43-116	
367-12-4	2-Fluorophenol	69	21-110	
4165-60-0	Nitrobenzene-d5	79	35-114	
4165-62-2	Phenol-d5	67	10-110	
1718-51-0	Terphenyl-d14	66	33-141	

VM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW08-0808 MS | Lab Sample ID: 680-39523-1 MS

Matrix: Water | Lab File ID: e4919.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 500(mL) | Date Analyzed: 08/18/2008 13:22

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	10	U	10	10
108-60-1	2,2'-oxybis(1-chloropropane)	10	U	10	10
95-95-4	2,4,5-Trichlorophenol	10	U	10	10
88-06-2	2,4,6-Trichlorophenol	10	U	10	10
120-83-2	2,4-Dichlorophenol	10	U	10	10
105-67-9	2,4-Dimethylphenol	10	U	10	10
51-28-5	2,4-Dinitrophenol	50	U	50	50
121-14-2	2,4-Dinitrotoluene	36		10	10
606-20-2	2,6-Dinitrotoluene	10	U	10	10
91-58-7	2-Chloronaphthalene	10	U	10	10
95-57-8	2-Chlorophenol	43		10	10
95-48-7	2-Methylphenol	10	U	10	10
88-74-4	2-Nitroaniline	50	U	50	50
88-75-5	2-Nitrophenol	10	U	10	10
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	50	U	50	50
534-52-1	4,6-Dinitro-2-methylphenol	50	U	50	50
101-55-3	4-Bromophenyl phenyl ether	10	U	10	10
59-50-7	4-Chloro-3-methylphenol	43		10	10
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	10	U	10	10
106-44-5	4-Methylphenol	10	U	10	10
100-01-6	4-Nitroaniline	50	U	50	50
100-02-7	4-Nitrophenol	59		50	50
83-32-9	Acenaphthene	30		10	10
208-96-8	Acenaphthylene	10	U	10	10
98-86-2	Acetophenone	10	U	10	10
120-12-7	Anthracene	10	U	10	10
1912-24-9	Atrazine	10	U	10	10
100-52-7	Benzaldehyde	10	U	10	10
56-55-3	Benzo(a)anthracene	10	U	10	10
50-32-8	Benzo(a)pyrene	10	U	10	10
205-99-2	Benzo(b)fluoranthene	10	U	10	10
191-24-2	Benzo(g,h,i)perylene	10	U	10	10

MM 192708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW08-0808 MS | Lab Sample ID: 680-39523-1 MS

Matrix: Water | Lab File ID: e4919.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 500(mL) | Date Analyzed: 08/18/2008 13:22

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	10	U	10	10
111-91-1	Bis(2-chloroethoxy)methane	10	U	10	10
111-44-4	Bis(2-chloroethyl)ether	10	U	10	10
117-81-7	Bis(2-ethylhexyl) phthalate	10	U	10	10
85-68-7	Butyl benzyl phthalate	10	U	10	10
105-60-2	Caprolactam	10	U	10	10
86-74-8	Carbazole	10	U	10	10
218-01-9	Chrysene	10	U	10	10
53-70-3	Dibenz(a,h)anthracene	10	U	10	10
132-64-9	Dibenzofuran	10	U	10	10
84-66-2	Diethyl phthalate	10	U	10	10
131-11-3	Dimethyl phthalate	10	U	10	10
84-74-2	Di-n-butyl phthalate	10	U	10	10
117-84-0	Di-n-octyl phthalate	10	U	10	10
206-44-0	Fluoranthene	10	U	10	10
86-73-7	Fluorene	10	U	10	10
118-74-1	Hexachlorobenzene	10	U	10	10
87-68-3	Hexachlorobutadiene	10	U	10	10
77-47-4	Hexachlorocyclopentadiene	10	U	10	10
67-72-1	Hexachloroethane	10	U	10	10
193-39-5	Indeno[1,2,3-cd]pyrene	10	U	10	10
78-59-1	Isophorone	10	U	10	10
91-20-3	Naphthalene	10	U	10	10
98-95-3	Nitrobenzene	10	U	10	10
621-64-7	N-Nitrosodi-n-propylamine	33		10	10
86-30-6	N-Nitrosodiphenylamine	10	U	10	10
87-86-5	Pentachlorophenol	55		50	50
85-01-8	Phenanthrene	10	U	10	10
108-95-2	Phenol	41		10	10
129-00-0	Pyrene	37		10	10

VM 092708

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah
Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW08-0808 MS
Lab Sample ID: 680-39523-1 MS
Matrix: Water
Lab File ID: e4919.d
Analysis Method: OLM04.3/SV
Date Received: 08/14/2008 08:55
Extract. Method: OLM04.3/SV
Date Extracted: 08/15/2008 13:48
Sample wt/vol: 500(mL)
Date Analyzed: 08/18/2008 13:22
Con. Extract Vol.: 0.5(mL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analy. Batch No.: 114843
Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	48	16-110	
118-79-6	2,4,6-Tribromophenol	67	10-123	
93951-73-6	2-Chlorophenol-d4	58	33-110	
321-60-8	2-Fluorobiphenyl	64	43-116	
367-12-4	2-Fluorophenol	55	21-110	
4165-60-0	Nitrobenzene-d5	68	35-114	
4165-62-2	Phenol-d5	56	10-110	
1718-51-0	Terphenyl-d14	76	33-141	

VM 09/2/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW08-0808 MSD | Lab Sample ID: 680-39523-1 MSD

Matrix: Water | Lab File ID: e4920.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 500(mL) | Date Analyzed: 08/18/2008 13:46

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
92-52-4	1,1'-Biphenyl	10	U	10	10
108-60-1	2,2'-oxybis[1-chloropropane]	10	U	10	10
95-95-4	2,4,5-Trichlorophenol	10	U	10	10
88-06-2	2,4,6-Trichlorophenol	10	U	10	10
120-83-2	2,4-Dichlorophenol	10	U	10	10
105-67-9	2,4-Dimethylphenol	10	U	10	10
51-28-5	2,4-Dinitrophenol	50	U	50	50
121-14-2	2,4-Dinitrotoluene	46		10	10
606-20-2	2,6-Dinitrotoluene	10	U	10	10
91-58-7	2-Chloronaphthalene	10	U	10	10
95-57-8	2-Chlorophenol	55		10	10
95-48-7	2-Methylphenol	10	U	10	10
88-74-4	2-Nitroaniline	50	U	50	50
88-75-5	2-Nitrophenol	10	U	10	10
91-94-1	3,3'-Dichlorobenzidine	20	U	20	20
99-09-2	3-Nitroaniline	50	U	50	50
534-52-1	4,6-Dinitro-2-methylphenol	50	U	50	50
101-55-3	4-Bromophenyl phenyl ether	10	U	10	10
59-50-7	4-Chloro-3-methylphenol	52		10	10
106-47-8	4-Chloroaniline	20	U	20	20
7005-72-3	4-Chlorophenyl phenyl ether	10	U	10	10
106-44-5	4-Methylphenol	10	U	10	10
100-01-6	4-Nitroaniline	50	U	50	50
100-02-7	4-Nitrophenol	73		50	50
83-32-9	Acenaphthene	36		10	10
208-96-8	Acenaphthylene	10	U	10	10
98-86-2	Acetophenone	10	U	10	10
120-12-7	Anthracene	10	U	10	10
1912-24-9	Atrazine	10	U	10	10
100-52-7	Benzaldehyde	10	U	10	10
56-55-3	Benzo[a]anthracene	10	U	10	10
50-32-8	Benzo[a]pyrene	10	U	10	10
205-99-2	Benzo[b]fluoranthene	10	U	10	10
191-24-2	Benzo[g,h,i]perylene	10	U	10	10

VM 09/22/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1
SDG No.: YORK23
Client Sample ID: YS08-GW08-0808 MSD | Lab Sample ID: 680-39523-1 MSD
Matrix: Water | Lab File ID: e4920.d
Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55
Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48
Sample wt/vol: 500(mL) | Date Analyzed: 08/18/2008 13:46
Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1
Injection Volume: 2(uL) | Level: (low/med) Low
% Moisture: | GPC Cleanup:(Y/N) N
Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
207-08-9	Benzo[k]fluoranthene	10	U	10	10
111-91-1	Bis(2-chloroethoxy)methane	10	U	10	10
111-44-4	Bis(2-chloroethyl)ether	10	U	10	10
117-81-7	Bis(2-ethylhexyl) phthalate	10	U	10	10
85-68-7	Butyl benzyl phthalate	10	U	10	10
105-60-2	Caprolactam	10	U	10	10
86-74-8	Carbazole	10	U	10	10
218-01-9	Chrysene	10	U	10	10
53-70-3	Dibenz(a,h)anthracene	10	U	10	10
132-64-9	Dibenzofuran	10	U	10	10
84-66-2	Diethyl phthalate	10	U	10	10
131-11-3	Dimethyl phthalate	10	U	10	10
84-74-2	Di-n-butyl phthalate	10	U	10	10
117-84-0	Di-n-octyl phthalate	10	U	10	10
206-44-0	Fluoranthene	10	U	10	10
86-73-7	Fluorene	10	U	10	10
118-74-1	Hexachlorobenzene	10	U	10	10
87-68-3	Hexachlorobutadiene	10	U	10	10
77-47-4	Hexachlorocyclopentadiene	10	U	10	10
67-72-1	Hexachloroethane	10	U	10	10
193-39-5	Indeno[1,2,3-cd]pyrene	10	U	10	10
78-59-1	Isophorone	10	U	10	10
91-20-3	Naphthalene	10	U	10	10
98-95-3	Nitrobenzene	10	U	10	10
621-64-7	N-Nitrosodi-n-propylamine	44		10	10
86-30-6	N-Nitrosodiphenylamine	10	U	10	10
87-86-5	Pentachlorophenol	66		50	50
85-01-8	Phenanthrene	10	U	10	10
108-95-2	Phenol	52		10	10
129-00-0	Pyrene	40		10	10

VM 09/2/08

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Savannah | Job No.: 680-39198-1

SDG No.: YORK23

Client Sample ID: YS08-GW08-0808 MSD | Lab Sample ID: 680-39523-1 MSD

Matrix: Water | Lab File ID: e4920.d

Analysis Method: OLM04.3/SV | Date Received: 08/14/2008 08:55

Extract. Method: OLM04.3/SV | Date Extracted: 08/15/2008 13:48

Sample wt/vol: 500(mL) | Date Analyzed: 08/18/2008 13:46

Con. Extract Vol.: 0.5(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analy. Batch No.: 114843 | Units: ug/L

CAS NO.	SURROGATE	%REC	LIMITS	Q
2199-69-1	1,2-Dichlorobenzene-d4	64	16-110	
118-79-6	2,4,6-Tribromophenol	80	10-123	
93951-73-6	2-Chlorophenol-d4	74	33-110	
321-60-8	2-Fluorobiphenyl	85	43-116	
367-12-4	2-Fluorophenol	67	21-110	
4165-60-0	Nitrobenzene-d5	89	35-114	
4165-62-2	Phenol-d5	69	10-110	
1718-51-0	Terphenyl-d14	91	33-141	

CM 092708

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK23

Matrix: (soil/water) WATER Lab Sample ID:C8H130293 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1060 / mL Date Received: 08/13/08
Work Order: KT4D21AA Date Extracted:08/15/08
Dilution factor: 0.94 Date Analyzed: 09/04/08
Moisture %:NA

QC Batch: 8228434

Client Sample Id: YS08-GW07-0808

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U

JLC 10/08

TestAmerica Burlington

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK23

Matrix: (soil/water) WATER Lab Sample ID:C8H130293 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1060 / mL Date Received: 08/13/08
Work Order: KT4D51AA Date Extracted:08/15/08
Dilution factor: 0.94 Date Analyzed: 09/04/08
Moisture %:NA

QC Batch: 8228434

Client Sample Id: YS08-EB01-081108

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	0.94	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.94	U
53469-21-9	Aroclor 1242	0.94	U
12672-29-6	Aroclor 1248	0.94	U
11097-69-1	Aroclor 1254	0.94	U
11096-82-5	Aroclor 1260	0.94	U

JAC 10/08

FORM I

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK23

Matrix: (soil/water) WATER Lab Sample ID:C8H130293 003
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1050 / mL
Work Order: KT4D91AA
Dilution factor: 0.95
Moisture %:NA

Date Received: 08/13/08
Date Extracted:08/15/08
Date Analyzed: 09/04/08

QC Batch: 8228434

Client Sample Id: YS08-FB01-081108

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	0.95	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.95	U
53469-21-9	Aroclor 1242	0.95	U
12672-29-6	Aroclor 1248	0.95	U
11097-69-1	Aroclor 1254	0.95	U
11096-82-5	Aroclor 1260	0.95	U

JAC 10/08

FORM I

TestAmerica Burlington

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK23

Matrix: (soil/water) WATER Lab Sample ID:C8H130293 004
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1030 / mL Date Received: 08/13/08
Work Order: KT4EC1AA Date Extracted:08/15/08
Dilution factor: 0.97 Date Analyzed: 09/04/08
Moisture %:NA

QC Batch: 8228434

Client Sample Id: YS08-GW09-0808

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	0.97	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.97	U
53469-21-9	Aroclor 1242	0.97	U
12672-29-6	Aroclor 1248	0.97	U
11097-69-1	Aroclor 1254	0.97	U
11096-82-5	Aroclor 1260	0.97	U

JC 10/08

FORM I

TestAmerica Burlington

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK23

Matrix: (soil/water) WATER Lab Sample ID: C8H130293 005
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1040 / mL Date Received: 08/13/08
Work Order: KT4EF1AA Date Extracted: 08/15/08
Dilution factor: 0.96 Date Analyzed: 09/04/08
Moisture %: NA

QC Batch: 8228434

Client Sample Id: YS08-GW09P-0808

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	0.96	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.96	U
53469-21-9	Aroclor 1242	0.96	U
12672-29-6	Aroclor 1248	0.96	U
11097-69-1	Aroclor 1254	0.96	U
11096-82-5	Aroclor 1260	0.96	U

JLC 10/08

FORM I

Lab Name: TestAmerica Laboratories, Inc. SDG Number: YORK23

Matrix: (soil/water) WATER Lab Sample ID: C8H130293 006
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1030 / mL Date Received: 08/13/08
Work Order: KT4EG1AA Date Extracted: 08/15/08
Dilution factor: 0.97 Date Analyzed: 09/04/08
Moisture %: NA

QC Batch: 8228434

Client Sample Id: YS08-GW09A-0808

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	0.97	U
11104-28-2	Aroclor 1221	1.9	U
11141-16-5	Aroclor 1232	0.97	U
53469-21-9	Aroclor 1242	0.97	U
12672-29-6	Aroclor 1248	0.97	U
11097-69-1	Aroclor 1254	0.97	U
11096-82-5	Aroclor 1260	0.97	U

JC 10/08

FORM I

TestAmerica Burlington
MATRIX SPIKE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK23

Matrix: (soil/water) WATER Lab Sample ID:C8H130293 006
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1010 / mL Date Received: 08/13/08
Work Order: KT4EG1AC Date Extracted:08/15/08
Dilution factor: 0.99 Date Analyzed: 09/04/08
Moisture %:NA

QC Batch: 8228434

Client Sample Id: YS08-GW09A-0808

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	8.86	
11096-82-5	Aroclor 1260	9.70	

JLC 10/08

FORM I

TestAmerica Burlington
MATRIX SPIKE DUPLICATE COMPOUNDS

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK23

Matrix: (soil/water) WATER Lab Sample ID:C8H130293 006
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1010 / mL
Work Order: KT4EG1AD
Dilution factor: 0.99
Moisture %:NA

Date Received: 08/13/08
Date Extracted:08/15/08
Date Analyzed: 09/04/08

QC Batch: 8228434

Client Sample Id: YS08-GW09A-0808

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	8.98	
11096-82-5	Aroclor 1260	9.80	

JAC 10/08

FORM I

TestAmerica Burlington

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK23

Matrix: (soil/water) WATER Lab Sample ID:C8H150313 001
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1020 / mL
Work Order: KT85V1AA
Dilution factor: 0.98
Moisture %:NA

Date Received: 08/15/08
Date Extracted:08/15/08
Date Analyzed: 09/04/08

QC Batch: 8228434

Client Sample Id: YS08-GW08-0808

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	0.98	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	0.98	U
53469-21-9	Aroclor 1242	0.98	U
12672-29-6	Aroclor 1248	0.98	U
11097-69-1	Aroclor 1254	0.98	U
11096-82-5	Aroclor 1260	0.98	U

JAC 10/08

FORM I

100

TestAmerica Burlington

Lab Name:TestAmerica Laboratories, Inc. SDG Number:YORK23

Matrix: (soil/water) WATER Lab Sample ID:C8H150313 002
Method: OCLP OLM04.3
Pesticide/PCBs Compounds - CLP (OLM04.3)

Sample WT/Vol: 1020 / mL
Work Order: KT85X1AA
Dilution factor: 0.98
Moisture %:NA

Date Received: 08/15/08
Date Extracted:08/15/08
Date Analyzed: 09/04/08

QC Batch: 8228434

Client Sample Id: YS08-EB01-081308

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
12674-11-2	Aroclor 1016	0.98	U
11104-28-2	Aroclor 1221	2.0	U
11141-16-5	Aroclor 1232	0.98	U
53469-21-9	Aroclor 1242	0.98	U
12672-29-6	Aroclor 1248	0.98	U
11097-69-1	Aroclor 1254	0.98	U
11096-82-5	Aroclor 1260	0.98	U

JAC 10/08

FORM I

TestAmerica Burlington

Client Sample ID: YS08-GW07-0808

HPLC

Lot-Sample #...: G8H130275-001 **Work Order #...:** KT39D1AA **Matrix.....:** WATER
Date Sampled...: 08/11/08 **Date Received..:** 08/13/08
Prep Date.....: 08/14/08 **Analysis Date..:** 08/20/08
Prep Batch #...: 8227313
Dilution Factor: 0.97 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.97	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	**0.079 J** B BL	**0.15**	**ug/L**
Nitroglycerin	ND	0.97	ug/L
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	ND	0.97	ug/L
RDX	ND	0.24	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.097	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	97	(48 - 143)

NOTE(S):

J Estimated result. Result is less than RL.

JAC 10/06

TestAmerica Burlington

Client Sample ID: YS08-EB01-081108

HPLC

Lot-Sample #...: G8H130275-002	**Work Order #...:** KT39G1AA	**Matrix.....:** WATER
Date Sampled...: 08/11/08	**Date Received..:** 08/13/08	
Prep Date.....: 08/14/08	**Analysis Date..:** 08/20/08	
Prep Batch #...: 8227313		
Dilution Factor: 0.96	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.14	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.29	ug/L
3,5-Dinitroaniline	ND	0.96	ug/L
1,3-Dinitrobenzene	ND	0.14	ug/L
2,4-Dinitrotoluene	ND	0.14	ug/L
2,6-Dinitrotoluene	ND	0.14	ug/L
HMX	ND	0.14	ug/L
Nitrobenzene	ND	0.14	ug/L
Nitroglycerin	**0.38 J**	**0.96**	**ug/L**
2-Nitrotoluene	ND	0.48	ug/L
3-Nitrotoluene	ND	0.48	ug/L
4-Nitrotoluene	ND	0.48	ug/L
PETN	**0.38 J**	**0.96**	**ug/L**
RDX	ND	0.24	ug/L
Tetryl	ND	0.14	ug/L
1,3,5-Trinitrobenzene	ND	0.096	ug/L
2,4,6-Trinitrotoluene	ND	0.14	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	101	(48 - 143)

NOTE(S):

J Estimated result. Result is less than RL.

SAC 10/08

103

TestAmerica Burlington

Client Sample ID: YS08-FB01-081108

HPLC

Lot-Sample #...: G8H130275-003	**Work Order #...:** KT39H1AA	**Matrix.....:** WATER
Date Sampled...: 08/11/08	**Date Received..:** 08/13/08	
Prep Date.....: 08/14/08	**Analysis Date..:** 08/20/08	
Prep Batch #...: 8227313		
Dilution Factor: 0.99	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.15	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.30	ug/L
3,5-Dinitroaniline	ND	0.99	ug/L
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	ND	0.15	ug/L
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	**0.40 J**	**0.99**	**ug/L**
2-Nitrotoluene	ND	0.50	ug/L
3-Nitrotoluene	ND	0.50	ug/L
4-Nitrotoluene	ND	0.50	ug/L
PETN	**0.39 J**	**0.99**	**ug/L**
RDX	ND	0.25	ug/L
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	ND	0.099	ug/L
2,4,6-Trinitrotoluene	ND	0.15	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	100	(48 - 143)

NOTE(S):

J Estimated result. Result is less than RL.

JPC 10/08

TestAmerica Burlington

Client Sample ID: YS08-GW09-0808

HPLC

Lot-Sample #...: G8H130275-004	**Work Order #...:** KT39J1AA	**Matrix.....:** WATER
Date Sampled...: 08/11/08	**Date Received..:** 08/13/08	
Prep Date.....: 08/14/08	**Analysis Date..:** 08/20/08	
Prep Batch #...: 8227313		
Dilution Factor: 0.98	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	**1.2**	**0.15**	**ug/L**
2-Amino-4,6-dinitrotoluene	**0.70**	**0.29**	**ug/L**
3,5-Dinitroaniline	**0.44 J**	**0.98**	**ug/L**
1,3-Dinitrobenzene	ND	0.15	ug/L
2,4-Dinitrotoluene	ND	0.15	ug/L
2,6-Dinitrotoluene	ND	0.15	ug/L
HMX	**1.8**	**0.15**	**ug/L**
Nitrobenzene	ND	0.15	ug/L
Nitroglycerin	ND	0.98	ug/L
2-Nitrotoluene	**0.13 J**	**0.49**	**ug/L**
3-Nitrotoluene	ND	0.49	ug/L
4-Nitrotoluene	ND	0.49	ug/L
PETN	ND	0.98	ug/L
RDX	**2.4**	**0.24**	**ug/L**
Tetryl	ND	0.15	ug/L
1,3,5-Trinitrobenzene	**0.32**	**0.098**	**ug/L**
2,4,6-Trinitrotoluene	**0.95**	**0.15**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	99	(48 - 143)

NOTE(S):

J Estimated result. Result is less than RL.

JLC 10/08

105

TestAmerica Burlington

Client Sample ID: YS08-GW09P-0808

HPLC

Lot-Sample #...: G8H130275-005 **Work Order #...:** KT39K1AA **Matrix.....:** WATER
Date Sampled...: 08/11/08 **Date Received..:** 08/13/08
Prep Date.....: 08/14/08 **Analysis Date..:** 08/20/08
Prep Batch #...: 8227313
Dilution Factor: 0.91 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2-Nitrotoluene	ND	0.46	ug/L
3-Nitrotoluene	ND	0.46	ug/L
4-Nitrotoluene	ND	0.46	ug/L
PETN	ND	0.91	ug/L
RDX	**2.3**	**0.23**	**ug/L**
Tetryl	ND	0.14	ug/L
1,3,5-Trinitrobenzene	**0.31**	**0.091**	**ug/L**
2,4,6-Trinitrotoluene	**0.87**	**0.14**	**ug/L**
4-Amino-2,6-dinitrotoluene	**1.1**	**0.14**	**ug/L**
2-Amino-4,6-dinitrotoluene	**0.67**	**0.27**	**ug/L**
3,5-Dinitroaniline	**0.41 J**	**0.91**	**ug/L**
1,3-Dinitrobenzene	ND	0.14	ug/L
2,4-Dinitrotoluene	ND	0.14	ug/L
2,6-Dinitrotoluene	ND	0.14	ug/L
HMX	**1.7**	**0.14**	**ug/L**
Nitrobenzene	ND	0.14	ug/L
Nitroglycerin	ND	0.91	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	101	(48 - 143)

NOTE(S):

J Estimated result. Result is less than RL.

JLC 10/08

TestAmerica Burlington

Client Sample ID: YS08-GW09A-0808

HPLC

Lot-Sample #...: G8H130275-006	**Work Order #...:** KT39N1AA	**Matrix.....:** WATER
Date Sampled...: 08/11/08	**Date Received..:** 08/13/08	
Prep Date.....: 08/14/08	**Analysis Date..:** 08/20/08	
Prep Batch #...: 8227313		
Dilution Factor: 1.04	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.16	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.31	ug/L
3,5-Dinitroaniline	ND	1.0	ug/L
1,3-Dinitrobenzene	ND	0.16	ug/L
2,4-Dinitrotoluene	ND	0.16	ug/L
2,6-Dinitrotoluene	ND	0.16	ug/L
HMX	ND	0.16	ug/L
Nitrobenzene	ND	0.16	ug/L
Nitroglycerin	ND	1.0	ug/L
2-Nitrotoluene	ND	0.52	ug/L
3-Nitrotoluene	ND	0.52	ug/L
4-Nitrotoluene	ND	0.52	ug/L
PETN	ND	1.0	ug/L
RDX	ND	0.26	ug/L
Tetryl	ND	0.16	ug/L
1,3,5-Trinitrobenzene	ND	0.10	ug/L
2,4,6-Trinitrotoluene	ND	0.16	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	98	(48 - 143)

JLC 10/08

TestAmerica Burlington

Client Sample ID: YS08-GW08-0808

HPLC

Lot-Sample #...: G8H130275-007	**Work Order #...:** KVA2J1AA	**Matrix.....:** WATER
Date Sampled...: 08/13/08	**Date Received..:** 08/15/08	
Prep Date.....: 08/18/08	**Analysis Date..:** 08/21/08	
Prep Batch #...: 8231464		
Dilution Factor: 24.32	**Method.....:** SW846 8330	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	**82**	**3.6**	**ug/L**
2-Amino-4,6-dinitrotoluene	**73**	**7.3**	**ug/L**
3,5-Dinitroaniline	**4.4 J**	**24**	**ug/L**
1,3-Dinitrobenzene	ND	3.6	ug/L
2,4-Dinitrotoluene	ND	3.6	ug/L
2,6-Dinitrotoluene	ND	3.6	ug/L
HMX	**83**	**3.6**	**ug/L**
Nitrobenzene	ND	3.6	ug/L
Nitroglycerin	ND	24	ug/L
2-Nitrotoluene	ND	12	ug/L
3-Nitrotoluene	ND	12	ug/L
4-Nitrotoluene	ND	12	ug/L
PETN	ND	24	ug/L
RDX	**300**	**6.1**	**ug/L**
Tetryl	ND	3.6	ug/L
1,3,5-Trinitrobenzene	**14**	**2.4**	**ug/L**
2,4,6-Trinitrotoluene	**55**	**3.6**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
3,4-Dinitrotoluene	0.0 SRD,*	(48 - 143)	Diluted Out - NQ

NOTE(S):

SRD The surrogate recovery was not calculated because the extract was diluted beyond the ability to quantitate a recovery.

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

JAC 10/08

108

TestAmerica Burlington

Client Sample ID: YS08-EB01-081308

HPLC

Lot-Sample #...:	G8H130275-008	**Work Order #...:**	KVA2K1AA	**Matrix.....:**	WATER
Date Sampled...:	08/13/08	**Date Received..:**	08/15/08		
Prep Date.....:	08/18/08	**Analysis Date..:**	08/20/08		
Prep Batch #...:	8231464				
Dilution Factor:	1.08	**Method.....:**	SW846 8330		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	ND	0.16	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.32	ug/L
3,5-Dinitroaniline	ND	1.1	ug/L
1,3-Dinitrobenzene	ND	0.16	ug/L
2,4-Dinitrotoluene	ND	0.16	ug/L
2,6-Dinitrotoluene	ND	0.16	ug/L
HMX	ND	0.16	ug/L
Nitrobenzene	**0.38** ~~PG~~ J 2C	**0.16**	**ug/L**
Nitroglycerin	ND	1.1	ug/L
2-Nitrotoluene	ND	0.54	ug/L
3-Nitrotoluene	ND	0.54	ug/L
4-Nitrotoluene	ND	0.54	ug/L
PETN	ND	1.1	ug/L
RDX	ND	0.27	ug/L
Tetryl	ND	0.16	ug/L
1,3,5-Trinitrobenzene	ND	0.11	ug/L
2,4,6-Trinitrotoluene	ND	0.16	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	100	(48 - 143)

NOTE(S):

PG The percent difference between the original and confirmation analyses is greater than 40%.

JBC 10/08

109

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: G8H130275
MS Lot-Sample #: G8H130275-006
Date Sampled...: 08/11/08
Prep Date.....: 08/14/08
Prep Batch #...: 8227313
Dilution Factor: 0.97

Work Order #...: KT39N1AD-MS
KT39N1AE-MSD
Date Received..: 08/13/08
Analysis Date..: 08/20/08

Matrix.....: WATER

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2-Amino-4,6-dinitrotoluene	ND	0.976	0.995	ug/L	102		SW846 8330
	ND	0.970	0.986	ug/L	102	0.88	SW846 8330
4-Amino-2,6-dinitrotoluene	ND	0.976	0.993	ug/L	102		SW846 8330
	ND	0.970	0.988	ug/L	102	0.58	SW846 8330
1,3-Dinitrobenzene	ND	0.976	1.00	ug/L	103		SW846 8330
	ND	0.970	0.992	ug/L	102	0.92	SW846 8330
2,4-Dinitrotoluene	ND	0.976	1.02	ug/L	104		SW846 8330
	ND	0.970	1.00	ug/L	104	1.1	SW846 8330
2,6-Dinitrotoluene	ND	0.976	1.02	ug/L	104		SW846 8330
	ND	0.970	1.00	ug/L	104	0.99	SW846 8330
HMX	ND	0.976	1.00	ug/L	103		SW846 8330
	ND	0.970	1.01	ug/L	104	0.39	SW846 8330
Nitrobenzene	ND	0.976	1.68	ug/L	172 a		SW846 8330
	ND	0.970	1.73	ug/L	179 a	3.4	SW846 8330
2-Nitrotoluene	ND	0.976	0.948	ug/L	97		SW846 8330
	ND	0.970	0.944	ug/L	97	0.41	SW846 8330
3-Nitrotoluene	ND	0.976	0.965	ug/L	99		SW846 8330
	ND	0.970	0.939	ug/L	97	2.8	SW846 8330
4-Nitrotoluene	ND	0.976	0.980	ug/L	100		SW846 8330
	ND	0.970	0.967	ug/L	100	1.3	SW846 8330
RDX	ND	0.976	0.986	ug/L	101		SW846 8330
	ND	0.970	0.978	ug/L	101	0.79	SW846 8330
Tetryl	ND	0.976	0.901	ug/L	92		SW846 8330
	ND	0.970	0.882	ug/L	91	2.0	SW846 8330
1,3,5-Trinitrobenzene	ND	0.976	0.954	ug/L	98		SW846 8330
	ND	0.970	0.943	ug/L	97	1.1	SW846 8330
2,4,6-Trinitrotoluene	ND	0.976	0.904	ug/L	93		SW846 8330
	ND	0.970	0.888	ug/L	92	1.7	SW846 8330
Nitroglycerin	ND	4.88	4.86	ug/L	99		SW846 8330
	ND	4.85	4.93	ug/L	102	1.5	SW846 8330
PETN	ND	4.88	5.36	ug/L	110		SW846 8330
	ND	4.85	6.69	ug/L	138 a	22	SW846 8330
3,5-Dinitroaniline	ND	0.976	0.986	ug/L	101		SW846 8330
	ND	0.970	0.979	ug/L	101	0.77	SW846 8330

(Continued on next page)

JLC 10/08

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MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: G8H130275 Work Order #...: KT39N1AD-MS Matrix.....: WATER
MS Lot-Sample #: G8H130275-006 KT39N1AE-MSD
Date Sampled...: 08/11/08 Date Received..: 08/13/08
Prep Date.....: 08/14/08 Analysis Date..: 08/20/08
Prep Batch #...: 8227313
Dilution Factor: 0.97

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2-Amino-4,6-dinitrotoluene	102	(50 - 155)			SW846 8330
	102	(50 - 155)	0.88	(0-30)	SW846 8330
4-Amino-2,6-dinitrotoluene	102	(55 - 155)			SW846 8330
	102	(55 - 155)	0.58	(0-30)	SW846 8330
1,3-Dinitrobenzene	103	(45 - 160)			SW846 8330
	102	(45 - 160)	0.92	(0-30)	SW846 8330
2,4-Dinitrotoluene	104	(60 - 135)			SW846 8330
	104	(60 - 135)	1.1	(0-30)	SW846 8330
2,6-Dinitrotoluene	104	(60 - 135)			SW846 8330
	104	(60 - 135)	0.99	(0-30)	SW846 8330
HMX	103	(80 - 115)			SW846 8330
	104	(80 - 115)	0.39	(0-30)	SW846 8330
Nitrobenzene	172 a	(50 - 140)			SW846 8330
	179 a	(50 - 140)	3.4	(0-30)	SW846 8330
2-Nitrotoluene	97	(45 - 135)			SW846 8330
	97	(45 - 135)	0.41	(0-30)	SW846 8330
3-Nitrotoluene	99	(50 - 130)			SW846 8330
	97	(50 - 130)	2.8	(0-30)	SW846 8330
4-Nitrotoluene	100	(50 - 130)			SW846 8330
	100	(50 - 130)	1.3	(0-30)	SW846 8330
RDX	101	(50 - 160)			SW846 8330
	101	(50 - 160)	0.79	(0-30)	SW846 8330
Tetryl	92	(20 - 175)			SW846 8330
	91	(20 - 175)	2.0	(0-30)	SW846 8330
1,3,5-Trinitrobenzene	98	(65 - 140)			SW846 8330
	97	(65 - 140)	1.1	(0-30)	SW846 8330
2,4,6-Trinitrotoluene	93	(50 - 145)			SW846 8330
	92	(50 - 145)	1.7	(0-30)	SW846 8330
Nitroglycerin	99	(87 - 117)			SW846 8330
	102	(87 - 117)	1.5	(0-30)	SW846 8330
PETN	110	(84 - 114)			SW846 8330
	138 a	(84 - 114)	22	(0-30)	SW846 8330
3,5-Dinitroaniline	101	(40 - 140)			SW846 8330
	101	(40 - 140)	0.77	(0-40)	SW846 8330

(Continued on next page)

JLC 10408

TestAmerica Burlington

Client Sample ID: YS08-GW07-0808

Dissolved HPLC

Lot-Sample #...:	G8H130275-001	**Work Order #...:**	KT39D1AC	**Matrix.....:**	WATER
Date Sampled...:	08/11/08	**Date Received..:**	08/13/08		
Prep Date.....:	08/14/08	**Analysis Date..:**	08/14/08		
Prep Batch #...:	8227290				
Dilution Factor:	1	**Method.....:**	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

JLC 10/08

TestAmerica Burlington

Client Sample ID: YS08-EB01-081108

Dissolved HPLC

Lot-Sample #...:	G8H130275-002	**Work Order #...:**	KT39G1AC	**Matrix.....:**	WATER
Date Sampled...:	08/11/08	**Date Received..:**	08/13/08		
Prep Date.....:	08/14/08	**Analysis Date..:**	08/14/08		
Prep Batch #...:	8227290				
Dilution Factor:	1	**Method.....:**	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

JAC 10/08

113

TestAmerica Burlington

Client Sample ID: YS08-FB01-081108

Dissolved HPLC

Lot-Sample #...:	G8H130275-003	**Work Order #...:**	KT39H1AC	**Matrix.....:**	WATER
Date Sampled...:	08/11/08	**Date Received..:**	08/13/08		
Prep Date.....:	08/14/08	**Analysis Date..:**	08/14/08		
Prep Batch #...:	8227290				
Dilution Factor:	1	**Method.....:**	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

JAC 10/08

TestAmerica Burlington

Client Sample ID: YS08-GW09-0808

Dissolved HPLC

Lot-Sample #...: G8H130275-004	**Work Order #...:** KT39J1AC	**Matrix.....:** WATER
Date Sampled...: 08/11/08	**Date Received..:** 08/13/08	
Prep Date.....: 08/14/08	**Analysis Date..:** 08/14/08	
Prep Batch #...: 8227290		
Dilution Factor: 1	**Method.....:** SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

SKC 10/08

TestAmerica Burlington

Client Sample ID: YS08-GW09P-0808

Dissolved HPLC

Lot-Sample #...:	G8H130275-005	**Work Order #...:**	KT39K1AC	**Matrix.....:**	WATER
Date Sampled...:	08/11/08	**Date Received..:**	08/13/08		
Prep Date.....:	08/14/08	**Analysis Date..:**	08/14/08		
Prep Batch #...:	8227290				
Dilution Factor:	1	**Method.....:**	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

JAC 10/08

TestAmerica Burlington

Client Sample ID: YS08-GW09A-0808

Dissolved HPLC

Lot-Sample #...:	G8H130275-006	**Work Order #...:**	KT39N1AC	**Matrix.....:**	WATER
Date Sampled...:	08/11/08	**Date Received..:**	08/13/08		
Prep Date.....:	08/14/08	**Analysis Date..:**	08/14/08		
Prep Batch #...:	8227290				
Dilution Factor:	1	**Method.....:**	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

JLC 10/08

TestAmerica Burlington

Client Sample ID: YS08-GW08-0808

Dissolved HPLC

Lot-Sample #...:	G8H130275-007	**Work Order #...:**	KVA2J1AC	**Matrix.....:**	WATER
Date Sampled...:	08/13/08	**Date Received..:**	08/15/08		
Prep Date.....:	08/18/08	**Analysis Date..:**	08/20/08		
Prep Batch #...:	8231387				
Dilution Factor:	1	**Method.....:**	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

JAC 10/08

118

TestAmerica Burlington

Client Sample ID: YS08-EB01-081308

Dissolved HPLC

Lot-Sample #...: G8H130275-008	**Work Order #...:** KVA2K1AC	**Matrix.....:** WATER
Date Sampled...: 08/13/08	**Date Received..:** 08/15/08	
Prep Date.....: 08/18/08	**Analysis Date..:** 08/20/08	
Prep Batch #...: 8231387		
Dilution Factor: 1	**Method.....:** SW846 8330 (Modif	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

JLC 10/08

119

4S08-GW09A-0808

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: G8H130275 **Work Order #...:** KT39N1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: G8H130275-006 KT39N1AG-MSD
Date Sampled...: 08/11/08 **Date Received..:** 08/13/08
Prep Date.....: 08/14/08 **Analysis Date..:** 08/14/08
Prep Batch #...: 8227290
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Nitroguanidine	**ND**	**250**	**229**	**ug/L**	**92**		**SW846 8330 (Modified**
	ND	**250**	**229**	**ug/L**	**92**	**0.05**	**SW846 8330 (Modified**

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

JMC
10408

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: G8H130275 **Work Order #...:** KT39N1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: G8H130275-006 KT39N1AG-MSD
Date Sampled...: 08/11/08 **Date Received..:** 08/13/08
Prep Date.....: 08/14/08 **Analysis Date..:** 08/14/08
Prep Batch #...: 8227290
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Nitroguanidine	**92**	**(73 - 117)**			**SW846 8330 (Modified**
	92	**(73 - 117)**	**0.05**	**(0-15)**	**SW846 8330 (Modified**

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

JAC
10405

121

4508-GW08-0808

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: G8H130275 **Work Order #...:** KVA2J1AD-MS **Matrix.....:** WATER
MS Lot-Sample #: G8H130275-007 KVA2J1AE-MSD
Date Sampled...: 08/13/08 **Date Received..:** 08/15/08
Prep Date.....: 08/18/08 **Analysis Date..:** 08/20/08
Prep Batch #...: 8231387
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Nitroguanidine	**ND**	**250**	**263**	**ug/L**	**105**		**SW846 8330 (Modified**
	ND	**250**	**265**	**ug/L**	**106**	**0.68**	**SW846 8330 (Modified**

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

JLC 10/4/08

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: G8H130275 Work Order #...: KVA2J1AD-MS Matrix.....: WATER
MS Lot-Sample #: G8H130275-007 KVA2J1AE-MSD
Date Sampled...: 08/13/08 Date Received..: 08/15/08
Prep Date.....: 08/18/08 Analysis Date..: 08/20/08
Prep Batch #...: 8231387
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Nitroguanidine	**105**	**(73 - 117)**			**SW846 8330 (Modified**
	106	**(73 - 117)**	**0.68**	**(0-15)**	**SW846 8330 (Modified**

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

JAC 10/08

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW07-0808

ab Name: TestAmerica Burlington Contract: 28000

ab Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

atrix (soil/water): WATER Lab Sample ID: 763491

evel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

oncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.2	~~J~~	B BL	P
7429-90-5	Aluminum	3330			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	11.5			P
7440-39-3	Barium	26.7	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	100000			P
7440-43-9	Cadmium	1.4	~~J~~	B BL	P
7440-48-4	Cobalt	1.6	J		P
7440-47-3	Chromium	47.2			P
7440-50-8	Copper	4.0	~~J~~	B BL	P
7439-89-6	Iron	6240			P
7439-95-4	Magnesium	2090	J		P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	23.7			P
7440-23-5	Sodium	22000			P
7440-02-0	Nickel	7.1	J		P
7439-92-1	Lead	6.1	J		P
7440-09-7	Potassium	10600			P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	21.2	J		P
7440-66-6	Zinc	18.0	~~J~~	B BL	P
57-12-5	Cyanide	6.3	~~J~~	B BL	AS

JC 10/08

Color Before: light brown Clarity Before: cloudy Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW08-0808

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763866

ıvel (low/med): LOW Date Received: 08/14/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	2600			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	7.0	J		P
7440-39-3	Barium	31.6	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	104000			P
7440-43-9	Cadmium	1.5	~~J~~	B BL	P
7440-48-4	Cobalt	1.3	J		P
7440-47-3	Chromium	10.1			P
7440-50-8	Copper	2.9	~~J~~	B BL	P
7439-89-6	Iron	5200			P
7439-95-4	Magnesium	2680	J		P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	35.5			P
7440-23-5	Sodium	12500			P
7440-02-0	Nickel	5.8	~~J~~	B BL	P
7439-92-1	Lead	1.6	J		P
7440-09-7	Potassium	3120	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	11.0	J		P
7440-66-6	Zinc	18.4	~~J~~	B BL	P
57-12-5	Cyanide	10.0	U		AS

JAC 10/08

Color Before: light brown Clarity Before: cloudy Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW09-0808

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763497

ıvel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.4	~~J~~	B BL	P
7429-90-5	Aluminum	293			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.3	J		P
7440-39-3	Barium	31.1	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	126000			P
7440-43-9	Cadmium	1.2	~~J~~	B BL	P
7440-48-4	Cobalt	1.1	J		P
7440-47-3	Chromium	1.7	J		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	767			P
7439-95-4	Magnesium	3200	J		P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	210			P
7440-23-5	Sodium	11600			P
7440-02-0	Nickel	2.7	~~J~~	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2680	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	3.6	~~J~~	B BL	P
7440-66-6	Zinc	12.2	~~J~~	B BL	P
57-12-5	Cyanide	2.3	~~J~~	B BL	AS

JMC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW09A-0808

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763501

ıvel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.0	~~J~~	B BL	P
7429-90-5	Aluminum	224			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	19.2	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	57600			P
7440-43-9	Cadmium	1.2	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	2.1	J		P
7440-50-8	Copper	3.5	~~J~~	B BL	P
7439-89-6	Iron	513			P
7439-95-4	Magnesium	2800	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	47.1			P
7440-23-5	Sodium	14500			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2980	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	0.82	~~J~~	B BL	P
7440-66-6	Zinc	7.0	~~J~~	B BL	P
57-12-5	Cyanide	7.4	~~J~~	B BL	AS

JC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW09P-0808

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763499

ıvel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.5	~~J~~	B BL	P
7429-90-5	Aluminum	339			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	32.3	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	130000			P
7440-43-9	Cadmium	1.2	~~J~~	B BL	P
7440-48-4	Cobalt	1.2	J		P
7440-47-3	Chromium	1.6	J		P
7440-50-8	Copper	1.7	~~J~~	B BL	P
7439-89-6	Iron	742			P
7439-95-4	Magnesium	3270	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	213			P
7440-23-5	Sodium	12000			P
7440-02-0	Nickel	2.8	~~J~~	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2720	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	2.0	~~J~~	B BL	P
7440-66-6	Zinc	7.6	~~J~~	B BL	P
57-12-5	Cyanide	8.5	~~J~~	B BL	AS

JAC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW07-0808F

ab Name: TestAmerica Burlington Contract: 28000

ab Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

atrix (soil/water): WATER Lab Sample ID: 763492

evel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

oncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	89.8	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	18.8	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	82000			P
7440-43-9	Cadmium	1.5	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	31.4			P
7440-50-8	Copper	2.6	J		P
7439-89-6	Iron	24.9	~~J~~	B BL	P
7439-95-4	Magnesium	1240	J		P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	4.7	~~J~~	B BL	P
7440-23-5	Sodium	22200			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	3.4	J		P
7440-09-7	Potassium	9840			P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	2.0	~~J~~	B BL	P
7440-66-6	Zinc	5.2	~~J~~	B BL	P

JLC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW08-0808F

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763867

ıvel (low/med): LOW Date Received: 08/14/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.7	~~J~~	B BL	P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	4.1	~~J~~	B BL	P
7440-39-3	Barium	21.8	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	102000			P
7440-43-9	Cadmium	1.1	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	2.3	J		P
7440-50-8	Copper	3.0	~~J~~	B BL	P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	2000	J		P
7439-97-6	Mercury	0.20	~~U~~	UL BL	CV
7439-96-5	Manganese	24.0			P
7440-23-5	Sodium	12200			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2200	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	1.1	~~J~~ J	~~B BL~~	P
7440-66-6	Zinc	12.0	~~J~~	B BL	P

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JAC 10108

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW09-0808F

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763498

ıvel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	35.1	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	124000			P
7440-43-9	Cadmium	1.1	~~J~~	B BL	P
7440-48-4	Cobalt	1.2	~~J~~	B BL	P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	35.6	~~J~~	B BL	P
7439-95-4	Magnesium	3080	J		P
7439-97-6	Mercury	0.20	~~UJ~~	~~UL BL~~	CV
7439-96-5	Manganese	201			P
7440-23-5	Sodium	11700			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2580	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	0.60	~~J~~	B BL	P
7440-66-6	Zinc	7.3	~~J~~	B BL	P

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JAC 10108

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW09A-0808F

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763502

ıvel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	14.2	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	54300			P
7440-43-9	Cadmium	1.0	~~J~~	B BL	P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	2.4	J		P
7439-89-6	Iron	152			P
7439-95-4	Magnesium	2720	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	45.0			P
7440-23-5	Sodium	14200			P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	1.8	J		P
7440-09-7	Potassium	3000	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	5.9	~~J~~	B BL	P

JAC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-GW09P-0808F

b Name: TestAmerica Burlington Contract: 28000

b Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

atrix (soil/water): WATER Lab Sample ID: 763500

evel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

oncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	33.0	J		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	126000			P
7440-43-9	Cadmium	1.3	~~J~~	B BL	P
7440-48-4	Cobalt	1.3	~~J~~	B BL	P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	2.0	J		P
7439-89-6	Iron	33.9	J		P
7439-95-4	Magnesium	3160	J		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	202			P
7440-23-5	Sodium	11800			P
7440-02-0	Nickel	2.0	~~J~~	B BL	P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	2670	J		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	0.85	~~J~~	B BL	P
7440-66-6	Zinc	6.7	~~J~~	B BL	P

JAC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-EB01-081108

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763493

ıvel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.7	J		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	145	J		P
7440-43-9	Cadmium	1.2	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	3.6	J		P
7439-89-6	Iron	74.9	J		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	5.2	J		P
7440-23-5	Sodium	124	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	0.76	J		P
7440-66-6	Zinc	9.7	J		P
57-12-5	Cyanide	2.9	J		AS

JLC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-EB01-081108F

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763494

ıvel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	190	J		P
7440-43-9	Cadmium	1.2	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	2.2	J		P
7439-89-6	Iron	17.9	J		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	4.2	J		P
7440-23-5	Sodium	188	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	0.79	J		P
7440-66-6	Zinc	10.8	J		P

JAC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-EB01-081308

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763868

ıvel (low/med): LOW Date Received: 08/14/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.2	J		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	86.1	J		P
7440-43-9	Cadmium	1.1	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	4.1	J		P
7439-89-6	Iron	19.4	J		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	2.0	J		P
7440-23-5	Sodium	146	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	5.8	J		P
57-12-5	Cyanide	2.8	J		AS

JAC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-EB01-081308F

.b Name: TestAmerica Burlington Contract: 28000

.b Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763869

ıvel (low/med): LOW Date Received: 08/14/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	10.0	U		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	102	J		P
7440-43-9	Cadmium	1.1	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	3.0	J		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	1.9	J		P
7440-23-5	Sodium	75.2	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	6.7	J		P

JRC 10108

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-FB01-081108

b Name: TestAmerica Burlington Contract: 28000

b Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

atrix (soil/water): WATER Lab Sample ID: 763495

evel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

oncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.1	J		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	92.8	J		P
7440-43-9	Cadmium	1.1	J		P
7440-48-4	Cobalt	50.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	2.1	J		P
7439-89-6	Iron	100	U		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	1.6	J		P
7440-23-5	Sodium	5000	U		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	4.6	J		P
57-12-5	Cyanide	2.9	J		AS

AC 10108

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

USEPA - CLP FORMS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS08-FB01-081108F

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

ıtrix (soil/water): WATER Lab Sample ID: 763496

ıvel (low/med): LOW Date Received: 08/12/2008

Solids: 0.0

ɔncentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-22-4	Silver	1.1	J		P
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	2.6	J		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-43-9	Cadmium	1.3	J		P
7440-48-4	Cobalt	0.43	J		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	36.6	J		P
7439-95-4	Magnesium	5000	U		P
7439-97-6	Mercury	0.20	U		CV
7439-96-5	Manganese	1.8	J		P
7440-23-5	Sodium	96.5	J		P
7440-02-0	Nickel	40.0	U		P
7439-92-1	Lead	10.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	6.8	J		P

JLC 10/08

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

September 10, 2008

TestAmerica Laboratories, Inc.

Ms. Chelsea Bennet
CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, VA 23462

Re: Laboratory Project No. 28000
Case: 28000; SDG: YORK23

Dear Ms. Bennet:

Enclosed are the analytical results for the samples that were received by TestAmerica Burlington on August 12th and 14th, 2008. Laboratory identification numbers were assigned, and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 08/12/08 ETR No: 127067		
763491	YS08-GW07-0808	08/11/08	WATER
763492	YS08-GW07-0808F	08/11/08	FILTRATE
763493	YS08-EB01-081108	08/11/08	WATER
763494	YS08-EB01-081108F	08/11/08	FILTRATE
763495	YS08-FB01-081108	08/11/08	WATER
763496	YS08-FB01-081108F	08/11/08	FILTRATE
763497	YS08-GW09-0808	08/11/08	WATER
763498	YS08-GW09-0808F	08/11/08	FILTRATE
763499	YS08-GW09P-0808	08/11/08	WATER
763500	YS08-GW09P-0808F	08/11/08	FILTRATE
763501	YS08-GW09A-0808	08/11/08	WATER
763501DP	YS08-GW09A-0808REP	08/11/08	WATER
763501MS	YS08-GW09A-0808MS	08/11/08	WATER
763501MD	YS08-GW09A-0808MSD	08/11/08	WATER
763502	YS08-GW09A-0808F	08/11/08	FILTRATE
763502DP	YS08-GW09A-0808FREP	08/11/08	FILTRATE
763502MD	YS08-GW09A-0808FMSD	08/11/08	FILTRATE
	Received: 08/14/08 ETR No: 127114		
763866	YS08-GW08-0808	08/13/08	WATER
763867	YS08-GW08-0808F	08/13/08	FILTRATE
763868	YS08-EB01-081308	08/13/08	WATER
763869	YS08-EB01-081308F	08/13/08	FILTRATE

30 Community Drive • Suite 11 South Burlington, VT 05403 tel 802.660.1990 fax 802.660.1919 www.testamericainc.com

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

In order to accommodate field length limitations in processing the data summary forms, the laboratory did, in certain instances, abbreviate the sample identifier. The electronically formatted data provides for the full sample identifier.

The samples in this delivery group were received by TAL Burlington. The containers provided for nitroaromatic analyses were forwarded to TAL West Sacramento. Analytical data for nitroaromatics is filed at the end of this submittal in sections titled Subcontract Data.

The original metals analyses of the samples in this delivery group were associated with a preparation blank that yielded the presence of lead at a concentration above reporting limit. The samples were re-digested and analyzed in association with an acceptable blank.

Any reference within this report to Severn Trent Laboratories, Inc. or STL, should be understood to refer to TestAmerica Laboratories, Inc. (formerly known as Severn Trent Laboratories, Inc.) The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

If there are any questions regarding this submittal, please contact me at 802 660-1990.

Sincerely,

Jim Madison
Project Manager

Enclosure

CASE NARRATIVE
Volatiles Fraction (OLM04.3)
SDG: YORK23
STL Lab Reference No.: 680-391982, 680-39416, 680-39523
Project: NWS Yorktown Site 30

I. RECEIPT
No receipt or storage anomalies were noted.

II. HOLDING TIMES
A. Sample Preparation: All holding times were met.
B. Sample Analysis: All holding times were met.

III. METHODS
Preparation: OLM04.3_Vol
Cleanup: None
Analysis: OLM04.3_Vol

IV. PREPARATION
Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All initial and continuing calibration criteria were met for target compounds.

The initial calibration curve was outside acceptance criteria for bromoform.

B. Blanks: No target compounds were detected in the method blanks.

C. Surrogates: All surrogates recovered within quality control (QC) limits.

D. Spikes: Laboratory control standards (LCS) were analyzed for quality assurance purposes and all target compounds recovered within quality control (QC) limits.

Client sample 680-39416-6 "YS08-GW09A-0808" was the designated matrix spike (MS) and matrix spike duplicate (MSD) and all target compounds recovered within quality control (QC) limits.

E. Samples: No dilutions were required for sample analysis.

F. Internal Standards: Internal standards for all samples were within quality control (QC) limits.

G. Notes: A laboratory storage blank was analyzed with these samples. The raw data for the laboratory storage blank is included in the data package at the end of the Raw Sample Data section.

CLP method OLM04.3 was utilized for this project, however our forms and raw data generated using the target software currently lists CLP 4.2 as the statement of work.

All tentatively identified compounds (TICs) in this sample delivery group are estimated values.

CASE NARRATIVE
Fraction: SEMI VOLATILES By GC/MS (OLM04.3)
SDG: YORK23
STL Lab Reference No.: 680-39416, 680-39523
Project: Yorktown Sites, CTO 195

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.
B. Sample Analysis: All holding times were met.

III. METHODS

Preparation: CLP-OLM04.3
Cleanup: CLP-GPC 3640A
Analysis: CLP-OLM04.3

IV. PREPARATION

Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration: All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Surrogates: All acceptance criteria were met.

D. Samples: All acceptance criteria were met.

E. Internal Standards: All acceptance criteria were met

F. Spike: Sample 680-39416-6 and 680-39523-1 were extracted and analyzed as the matrix spike / matrix spike duplicate. 680-39523-1MSD has one analyte outside control limits and has been denoted with an "*" on the form 3.

Other: Regarding potential differences in values between Form 3s and raw data, please be advised of the following TA Savannah LIMS programming rules:

- Raw results are evaluated <u>without</u> a Lower Limit governor. (Therefore, all hits >0 are presented on raw data.)
- Reported results are evaluated <u>with</u> a Lower Limit governor. (Therefore, only hits >RL presented on LIMS Report/Form 1.)
- %Recovery is calculated using the <u>raw</u> result.
- %RPD is calculated using the <u>reported</u> result.

Due to programming rules, MS/MSD RPDs may be noted as NC, Not Calculated, from the reported result.

CASE NARRATIVE
TestAmerica Burlington

SDG# YORK23

Sample Receiving:
TestAmerica Pittsburgh received samples on August 13, and 15, 2007. The coolers were received within the proper temperature range.

If project specific QC was not required for samples contained in this report and batch QC was completed on these samples, anomalous results will be discussed below.

PCBs:
There were no problems associated with the analysis.

Case Narrative

TestAmerica West Sacramento Project Number G8H130275

WATER, 8330, Nitroaromatics & Nitroamines
Sample(s): 1, 2, 3, 4, 5, 6, 6, 6
The matrix spike and/or matrix spike duplicate (MS/MSD) associated with this extraction batch has recoveries are outside the established control limits for Nitrobenzene and PETN. Acceptable laboratory control sample (LCS) data demonstrate that the analytical system is in control. This anomaly is most likely matrix related.

There were no other anomalies associated with this project.

Intercompany Chain of Custody

SDG/Job Reference YORK23
PO Reference 127067
Project ID SUBR7
Project Name Yorktown NWS
Due Date 09/09/08

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	PCB-Only by OLM04.3	
YS08-GW07-0808	763491	WATER	08/11/08	1005	X	
YS08-EB01-081108	763493	WATER	08/11/08	1145	X	
YS08-FB01-081108	763495	WATER	08/11/08	1200	X	
YS08-GW09-0808	763497	WATER	08/11/08	1640	X	
YS08-GW09P-0808	763499	WATER	08/11/08	1645	X	
YS08-GW09A-0808	763501	WATER	08/11/08	1405	X	MS/MD ON THIS SAMPLE

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Josh L. Ostrin	08/12/08	1615	[illegible]	8/13/08	0945

Cooler Receipt Form
TestAmerica Pittsburgh

Client: T/A Burlington Project: _____ Quote: 77432

Cooler Rec'd & Opened for Temp. Check on: 8-13-08

Coolers Opened and Unpacked on: 8-13-08 By: AC (Signature)

TestAmerica Pittsburgh Lot Number: C8H130293

		Yes	No	NA
1.	Were custody seals on the outside of the cooler?	✓		
	If YES, how many and where? Quantity 1 Location Front			
	Were signatures and date correct?	✓		
2.	Were custody papers included inside the cooler?	✓		
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓		
4.	Did you sign the custody papers in the appropriate place?	✓		
5.	Was shippers packing slip attached to this form?	✓		
6.	Were packing materials used?	✓		
	If YES, what type? Bubble wrap			
7.	Were the samples received within the acceptable temperature range?	✓		
8.	Were the samples appropriately preserved?			✓
9.	Were all bottles sealed in separate plastic bags?	✓		
10.	Did all bottles arrive in good condition (unbroken)?	✓		
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓		
12.	Did all bottle labels and/or tags agree with custody papers?	✓		
13.	Were correct bottles used for tests indicated?	✓		
14.	Were all VOA vials checked for the presence of air bubbles?			✓
15.	Was a sufficient amount of sample sent in each bottle?	✓		

16. Samples received by: FEDEX UPS CLIENT DROP-OFF OTHER DHL US CARGO

Explain any discrepancies: _____

Level 2 Review _____

Was contacted on _____ by _____ to resolve discrepancies.

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	3-4	4
2	2-3	2

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

If samples required preservation in the laboratory, the following lot number(s) was/were used:

Nitric Acid _____ Hydrochloric Acid _____

Sulfuric Acid _____ Sodium Hydroxide _____

YORK23

Intercompany Chain of Custody

SDG/Job Reference YORK23
PO Reference
Project ID SUBR7
Project Name Yorktown NWS
Due Date 09/11/08

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Sample ID	TAL Burlington Sample ID	Matrix	Date Sampled	Time Sampled	PCB-Only by OLM04.3
YS08-GW08-0808	763866	WATER	08/13/08	1450	X
YS08-EB01-081308	763866	WATER	08/13/08	1515	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Jim Mark	8/14/08	1600	Patrick Pland	8/15/08	1020

11

149
(1 - 32)

Cooler Receipt Form

TestAmerica Pittsburgh

Client: TestAmerica-Burlington Project: _____ Quote: 77432

Cooler Rec'd & Opened for Temp. Check on: 8/15/08

Coolers Opened and Unpacked on: 8/15/08 By: PRF (Signature)

TestAmerica Pittsburgh Lot Number: C8H150313

		Yes	No	NA
1.	Were custody seals on the outside of the cooler?	✓		
	If YES, how many and where? Quantity 1 Location front			
	Were signatures and date correct?	✓		
2.	Were custody papers included inside the cooler?	✓		
3.	Were custody papers properly filled out (ink, signed, match labels)?	✓		
4.	Did you sign the custody papers in the appropriate place?	✓		
5.	Was shippers packing slip attached to this form?	✓		
6.	Were packing materials used?	✓		
	If YES, what type? Bubble Wrap			
7.	Were the samples received within the acceptable temperature range?	✓		
8.	Were the samples appropriately preserved?			✓
9.	Were all bottles sealed in separate plastic bags?		✓	
10.	Did all bottles arrive in good condition (unbroken)?	✓		
11.	Were all bottle labels complete (sample ID, preservatives, etc.)?	✓		
12.	Did all bottle labels and/or tags agree with custody papers?	✓		
13.	Were correct bottles used for tests indicated?	✓		
14.	Were all VOA vials checked for the presence of air bubbles?			✓
15.	Was a sufficient amount of sample sent in each bottle?	✓		

16. Samples received by: FEDEX UPS CLIENT DROP-OFF OTHER DHL US CARGO

Explain any discrepancies: _____

Level 2 Review _____

Was contacted on _____ by _____ to resolve discrepancies.

Cooler Receipt Form

TestAmerica Pittsburgh

P: Preserved
UP: Unpreserved

Sample ID	TMET PH<2	DMET PH<2	HG PH<2	NUT(1) PH<2	CN PH ≥12	OG TPHC PH<2	PHEN PH<2	SULF PH ≥12	TOC PH<2	TOX PH<2	VOA P/UP	hrdnss PH<2			

(1) "NUT" could include sample bottles for ammonia, chemical oxygen demand, nitrate/nitrite, TKN, or total phosphorus

Comments: _____

Cooler Number	Temperature*	Thermometer ID
1	3.3°	5

*Acceptable Temperature Range: 4°C ± 2°C

Sample	Lot Number**

**Please use an asterisk if bottle lot number was covered by the label

If samples required preservation in the laboratory, the following lot number(s) was/were used:

Nitric Acid _____ Hydrochloric Acid _____

Sulfuric Acid _____ Sodium Hydroxide _____

TA PT/Mar-08/96-005/COOL.DOC

Page 2 of 2

Sample Summary

TestAmerica West Sacramento Project Number G8H130275

WO#	Sample #	Client Sample ID	Sampling Date	Received Date
KT39D	1	YS08-GW07-0808	8/11/2008 10:05 AM	8/13/2008 09:00 AM
KT39G	2	YS08-EB01-081108	8/11/2008 11:45 AM	8/13/2008 09:00 AM
KT39H	3	YS08-FB01-081108	8/11/2008 12:00 PM	8/13/2008 09:00 AM
KT39J	4	YS08-GW09-0808	8/11/2008 04:40 PM	8/13/2008 09:00 AM
KT39K	5	YS08-GW09P-0808	8/11/2008 04:45 PM	8/13/2008 09:00 AM
KT39N	6	YS08-GW09A-0808	8/11/2008 02:05 PM	8/13/2008 09:00 AM
KVA2J	7	YS08-GW08-0808	8/13/2008 02:50 PM	8/15/2008 09:20 AM
KVA2K	8	YS08-EB01-081308	8/13/2008 03:15 PM	8/15/2008 09:20 AM

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

G8H130276

Intercompany Chain of Custody

SDG/Job Reference YORK23
PO Reference 127067
Project ID SUBR7
Project Name Yorktown NWS
Due Date 09/09/08

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1919

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

	Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine	
1	YS08-GW07-0808	763491	WATER	08/11/08	1005	X	X	
2	YS08-EB01-081108	763493	WATER	08/11/08	1145	X	X	
3	YS08-FB01-081108	763495	WATER	08/11/08	1200	X	X	
4	YS08-GW09-0808	763497	WATER	08/11/08	1640	X	X	
5	YS08-GW09P-0808	763499	WATER	08/11/08	1645	X	X	
6	YS08-GW09A-0808	763501	WATER	08/11/08	1405	X	X	Run MS/MD on this sample

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	08/12/08	1645	Chang Hue	8/13/08	1335

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT TAL - Burlington PM DA LOG # 53546

LOT# (QUANTIMS ID) G8H130275 QUOTE# 77439 LOCATION W9C

		Initials	Date
DATE RECEIVED 8/13/08 TIME RECEIVED 0900		CV	8/13/08
DELIVERED BY	☑ FEDEX ☐ CA OVERNIGHT ☐ CLIENT ☐ AIRBORNE ☐ GOLDENSTATE ☐ DHL ☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS ☐ TAL COURIER ☐ VALLEY LOGISTICS ☐ MORGAN HILL COURIER ☐ OTHER		
CUSTODY SEAL STATUS	☑ INTACT ☐ BROKEN ☐ N/A		
CUSTODY SEAL #(S) Seal			
SHIPPPING CONTAINER(S)	☑ TAL ☐ CLIENT ☐ N/A		
TEMPERTURE RECORD (IN °C)	IR 4 ☐ 5 ☑ ☐ OTHER		
COC #(S)	NA		
TEMPERATURE BLANK	Observed: ✓ Corrected:		
SAMPLE TEMPERATURE	See list Observed: Average: Corrected Average:		
COLLECTOR'S NAME:	☐ Verified from COC ☑ Not on COC		
pH MEASURED	☐ YES ☐ ANOMALY ☑ N/A		
LABELED BY			
LABELS CHECKED BY			
PEER REVIEW	☑ NA		
SHORT HOLD TEST NOTIFICATION	SAMPLE RECEIVING WETCHEM ☑ N/A VOA-ENCORES ☑ N/A		
☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL	☑ N/A		
☑ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES	☐ N/A		
☐ CLOUSEAU	☐ TEMPERATURE EXCEEDED (2 °C – 6 °C)*1 ☑ N/A		
☐ WET ICE	☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED		

Notes:

*1 Acceptable temperature range for State of Wisconsin samples is≤4°C.

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

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TestAmerica West Sacramento

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Bottle Lot Inventory

Lot ID: G8H130275

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOA*																				
VOAh*																				
AGB	4	4	4	4	4	6														
AGBs																				
250AGB																				
250AGBs																				
250AGBn																				
500AGB																				
____AGJ																				
500AGJ																				
250AGJ																				
125AGJ																				
____CGJ																				
500CGJ																				
250CGJ																				
125CGJ																				
PJ																				
PJn																				
500PJ																				
500PJn																				
500PJna																				
500PJzn/na																				
250PJ																				
250PJn																				
250PJna																				
250PJzn/na																				
Acetate Tube																				
_____"CT																				
Encore																				
Folder/filter																				
PUF																				
Petri/Filter																				
XAD Trap																				
Ziploc																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

h = hydrochloric acid s = sulfuric acid na = sodium hydroxide n = nitric acid zn = zinc acetate

Number of VOAs with air bubbles present / total number of VOA's

QA-185 5/05 EM

Page 3

LEAVE NO SPACES BLANK. USE "NA" IF NOT APPLICABLE.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

MULTI COOLER RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT: TAL- Burlington LOT# (QUANTIMS ID): G8H130275

	INITIALS	DATE
TEMPERTURE RECORD (IN °C) IR 4 ☐ 5 ☑ ☐ OTHER	CN	8/13/08

COOLER ID 1
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S) ~~CN~~ 8/13/08
COC #(S) na
TEMPERATURE BLANK: OBSERVED: ✓ CORRECTED:
SAMPLE TEMPERATURE:
OBSERVED: 4 5 4 AVERAGE: 4 CORRECTED: 5
SAMPLES / TESTS (IF NCM REQUIRED):

COOLER ID 2
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S)
COC #(S)
TEMPERATURE BLANK: OBSERVED: CORRECTED:
SAMPLE TEMPERATURE:
OBSERVED: 3 3 3 AVERAGE: 3 CORRECTED: 4
SAMPLES / TESTS (IF NCM REQUIRED):

COOLER ID 3
CUSTODY SEAL STATUS ☑ INTACT ☐ BROKEN ☐ N/A
CUSTODY SEAL #(S)
COC #(S) na
TEMPERATURE BLANK: OBSERVED: ✓ CORRECTED:
SAMPLE TEMPERATURE:
OBSERVED: 5 4 6 AVERAGE: 5 CORRECTED: 6
SAMPLES / TESTS (IF NCM REQUIRED):

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

QA-185 1/06 DAW, Page 2

Intercompany Chain of Custody

SDG/Job Reference YORK23
PO Reference 127067
Project ID SUBR7
Project Name Yorktown NWS
Due Date 09/11/08

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660-1990 Fax: 802 660-1918

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

	Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Time Sampled	8330 + NG/PETN/3,5DNA	8330M Nitroguandine
1	YS08-GW08-0808	763866	WATER	08/13/08	1450	X	X
2	YS08-EB01-081308	763868	WATER	08/13/08	1515	X	X

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	8/14/8	1530	[signature]	8/15/08	1110

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST
TestAmerica West Sacramento

CLIENT TA Burlington PM RA LOG # 53624

LOT# (QUANTIMS ID) G8H160209 QUOTE# 7439 LOCATION W16A

		Initials	Date
DATE RECEIVED 8/15/08	TIME RECEIVED 920	JP	8/15/08
DELIVERED BY	☒ FEDEX ☐ CA OVERNIGHT ☐ CLIENT ☐ AIRBORNE ☐ GOLDENSTATE ☐ DHL ☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS ☐ TAL COURIER ☐ VALLEY LOGISTICS ☐ MORGAN HILL COURIER ☐ OTHER		
CUSTODY SEAL STATUS	☐ INTACT ☐ BROKEN ☒ N/A		
CUSTODY SEAL #(S)	N/A		
SHIPPPING CONTAINER(S)	☐ TAL ☐ CLIENT ☒ N/A		
TEMPERTURE RECORD (IN °C)	IR 4 ☐ 5 ☒ ☐ OTHER		
COC #(S)	N/A		
TEMPERATURE BLANK	Observed: Corrected: N/A		
SAMPLE TEMPERATURE	Observed: 2 3 3 Average: 3 Corrected Average: 3		
COLLECTOR'S NAME:	☐ Verified from COC ☒ Not on COC		
pH MEASURED	☐ YES ☐ ANOMALY ☒ N/A		8-16-08
LABELED BY			
LABELS CHECKED BY			
PEER REVIEW	☒ NA		
SHORT HOLD TEST NOTIFICATION	SAMPLE RECEIVING ☒ N/A; WETCHEM ☒ N/A; VOA-ENCORES ☒ N/A		
☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL	☒ N/A		
☒ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES	☐ N/A		
☐ CLOUSEAU	☐ TEMPERATURE EXCEEDED (2 °C – 6 °C)*1 ☒ N/A		
☐ WET ICE	☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED		

Notes:

*1 Acceptable temperature range for State of Wisconsin samples is≤4°C.

LEAVE NO SPACES BLANK. USE "N/A" IF NOT APPLICABLE.

TestAmerica West Sacramento

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Bottle Lot Inventory

Lot ID: G8H160209

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOA*																				
VOAh*																				
AGB	4	4																		
AGBs																				
250AGB																				
250AGBs																				
250AGBn																				
500AGB																				
____AGJ																				
500AGJ																				
250AGJ																				
125AGJ																				
____CGJ																				
500CGJ																				
250CGJ																				
125CGJ																				
PJ																				
PJn																				
500PJ																				
500PJn																				
500PJna																				
500PJzn/na																				
250PJ																				
250PJn																				
250PJna																				
250PJzn/na																				
Acetate Tube																				
_____"CT																				
Encore																				
Folder/filter																				
PUF																				
Petri/Filter																				
XAD Trap																				
Ziploc																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

h = hydrochloric acid s = sulfuric acid na = sodium hydroxide n = nitric acid zn = zinc acetate

Number of VOAs with air bubbles present / total number of VOA's

QA-185 5/05 EM

Page 3

LEAVE NO SPACES BLANK. USE "NA" IF NOT APPLICABLE.

CTO 195

Serial Number 002064

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

◯ TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

◯ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: NWS Yorktown Site 8	PROJECT NO.: 362248.F1.MW	PROJECT LOCATION (STATE):
TAL (LAB) PROJECT MANAGER:	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Laura Cook	CLIENT PHONE: 757.671.8311	CLIENT FAX: 757.499-1885
CLIENT NAME: CH2MHILL	CLIENT E-MAIL: —	
CLIENT ADDRESS: 5700 Cleveland St Suite 101 VA Beach VA 23462		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE ___ OF ___

STANDARD REPORT DELIVERY ◯
DATE DUE ___

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE ___

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOCs OLM04.3	CNNS 300.0	Alkalinity 310.1	TOC 9060	SVOC OLM04.3	Sulfide 376.1	MEE RSK-175	PCBs	Total metals	Fl. metals	REMARKS
								HCl	None	None	HCl	None	Zn acetate	None	None	HNO_3	HNO_3	
								NUMBER OF CONTAINERS SUBMITTED										
08/11/2008	1005	YS08-GW07-0808		✓				3	1	1	1	2	2	3	2	1	1	Savannah → VOCs, SVOCs, CNNS, MEE, Sulfide, TOC, alkalinity; Burlington → metals, Fl. metals, PCBs, cyanide, explosives, nitroguanidine
08/11/2008	1145	YS08-EB01-081108		✓				3	1	1	1	2	2	3	2	1	1	
08/11/2008	1200	YS08-FB01-081108		✓				3	1	1	1	2	2	3	2	1	1	
08/11/2008	1440	YS08-GW09-0808		✓				3	1	1	1	2	2	3	2	1	1	
08/11/2008	1645	YS08-GW09P-0808		✓				3	1	1	1	2	2	3	2	1	1	
08/11/2008	1405	YS08-GW09A-0808		✓				9	3	3	3	6	6	9	4	3	3	
08/11/2008	1010	YS08-TB01-081108		✓				3										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Angela Peters	8/11	2000						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
Jason L Austin	08/12/08	0920	YES ☒ NO ◯			171136, ~~145~~ 146, 166, 266, 156, 216, 256, 276, 176, 186. First 3 characters the same for all custody seals.

08/13/08

TAL8240-680 (1207)

GPL LABORATORIES, LLLP

CTO 195

7210A Corporate Court
Frederick, MD 21703
(301) 694-5310
Fax (301) 620-0731

Contract #/Billing Reference

Project: NWS Yorktown Site 8 362248.F1.MW
Client: CH2MHILL
Send Results To: Laura Cook
Address: 5700 Cleveland St Suite 101
VA Beach, VA 23462
Phone: 757 671 8311

Turnaround Time: Per Contract
Lab Cooler No.

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Cyanide	Explosives (Nitroglycerine)									CLIENT COMMENTS
# of Containers					1	2	2								
Container Type					250 poly	1L AMB	1L AMB								
Preservative Used					NaOH	–	–								
Y508-GW02-0808	8/11/08	1005	aq	AP/MP	1	2	2								all analysis on this page by Burlington
Y508-FB01-081108		1145			1	2	2								
Y508-FB01-081108		1200			1	2	2								
Y508-GW07-0808		1640			1	2	2								
Y508-GW09P-0808		1645			1	2	2								
Y508-GW09A-0808		1405			3	6	6								
Y508-TB01-081108		1010													

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
Angela Potter	8/11 2000			Joan L Costin	08/12/08 0920

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
					8631 7370 5484

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:
				3.4, 4.4, 3.5, 5.5, 2.6, 2.7, 3.0

G.P. W.O. _____

CTO 195

18969

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2MHILL
Address: 5700 Cleveland St. Suite 101
City: VA Beach State: VA Zip: 23462
Project Contact: Laura Cook
Phone #: 757 671 8311
Sampler's Name: David Livingston | Angela Petree

Project Information

Project Name: NWS Yorktown Site 8 CTO 195
Sampling Location: Site 8 PN: 362248.F1.NW
Turnaround time: per contract
Batch QC or Project Specific? If Specific, which Sample ID?: FIL. METALS
Are aqueous samples field filtered for metals? Y or N: EB01 & TB01
Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	Cyanide	Explo/PETN/DNA/Nitroglycerin	Nitroaromatic/Nitramine	pH / Sample Info (Lab Use)
	YS08-GW08-0808	8/13/08	1450	AQ	~~2~~ 5		1					1	2	2	
	YS08-TB01-081308	↓	1525	↓	~~2~~ 5										
	YS08-EB01-081308	↓	1515	↓	~~2~~ 5							1	2	2	

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments: All analysis on this pg by Burlington

Sample Custody

Relinquished by: Angela Petree	Date/Time: 8/13/08 1800	Received by: [signature]	Date/Time: 8/14/8 0930
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract? Y or N If yes, where?	Custody Seal(s) intact? Y or N	On Ice? Y or N	Cooler Temp: 3.8 / 0.8 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO 195

18968

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland Street Suite 101
City: VA Beach State: VA Zip: 23462
Project Contact: Laura Cook
Phone #: 757 671 8311
Sampler's Name: David Livingston | Angela Petree

Project Information

Project Name: NWS Yorktown Site 8 CTO 195
Sampling Location: Site 8 PN: 362248.F1.MW
Turnaround time: Per Contract
Batch QC or Project Specific? If Specific, which Sample ID?: TB01 & EB01
Are aqueous samples field filtered for metals? Y or N: F. Metal sample
Are high concentrations expected? Y or N? If yes, which ID(s)?:

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other Zn acetate	VOCs 8260/524.3	CNNS 300.0	ALKALINITY 310	TOC 9060	SVOC 8270/524.3	SULFIDE 376.1	MEE RSK-175	PCB	TOTAL METALS	FIL. metals	pH / Sample Info (Lab Use)
	YS08-GW08-0808	8/13/08	1450	aq	17	4		2			2	3	1	1	1	2	2	3	2	1	1	
	YS08-TB01-081308	↓	1525	↓	3	3		~~2~~ 08			~~2~~ 08	3	~~1~~	~~1~~	~~1~~	~~2~~	~~2~~	~~0~~	~~2~~	~~1~~	~~1~~ 08	
	YS08-EB01-081308	↓	1515	↓	17	4	1	2			2	3	1	1	1	2	2	3	2	1	1	

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Savannah: VOCs, SVOCs, CNNS, MEE, SULFIDE, TOC, alkalinity
Burlington: metals, F. metals, PCBs, cyanide, explosives, nitroguanidine

Sample Custody

Relinquished by: Angela Petree	Date/Time: 8/13/08 1800	Received by:	Date/Time: 8/14/8 0930
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontact? Y or N If yes, where?	Custody Seal(s) intact? Y or N	On Ice? Y or N	Cooler Temp: 3.8 / 0.8 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 08/05-11/08
Received Date: 08/06-12/08
Analysis Dates: 08/12-15/08

Cooler Temp: 0.4°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications required for the initial calibration.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method and holding blanks. The QC blanks associated with this SDG were: YS08-TB01-081108 (no positive results), YS30-TB01-080508 (no positive results) and YS08-TB01-081308 (no positive results)- trip blank; YS08-EB01-081108 (no positive results) and YS08-EB01-081308 (no positive results)- equipment blanks; YS08-FB01-0081108 (no positive results) - field blank.

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS08-GW09A-0808—all criteria were meet.

Field Duplicate Sample

A field duplicate was submitted for sample YS08-GW09-0808—no positive results were exhibited, no qualifications required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Iyuna Manchuk **Date:** 9/27/08

Initial Calibration Date: 8/6/2008

RRF and %RSD Calculations:

Compound Name: methylene chloride
Lab Value: 1.451

Area of Compound	436380
Area of Internal STD	75196
Conc. of Internal STD	50
Conc. of Compound	200
Calculated RRF	1.451

Compound Name: chlorobenzene
Lab Value: 2.8

RRF of STD 1	2.460
RRF of STD 2	2.321
RRF of STD 3	2.290
RRF of STD 4	2.330
RRF of STD 5	2.364
Calculated % RSD	2.8

Continuing Calibration File ID: 8/12/2008

RRF and %D Calculations:

Compound Name: vinyl chloride
Lab Value: 1.186

Area of Compound	93057
Area of Internal STD	78467
Conc. of Internal STD	50
Conc. of Compound	50
Calculated RRF	1.186

Compound Name: carbon tetrachloride
Lab Value: 7.8

Average RRF	0.295
Calibration Check RRF	0.318
Calculated % D	-7.8

SAMPLE CALCULATION

Sample ID: YS08-GW07-0808
Standard ID: 8/12/2008
Compound: chloroform
Concnetration: 3.7 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	13553		
Area of Internal STD	75751		
Conc. of Internal (ng)	250	250	
RRF of Compound	2.399		
Dilution Factor	1	1	
Weight of Sample	NA	5	
Volume of Sample	5	NA	
% Moisture	NA		
Aliquot of sample	NA	NA	
Concentration	3.73	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	4.084	4.115	1.008
Standard	4.079	4.115	1.009

Data Completeness

The data package was received complete and intact. Resubmissions were required due to a Form V that did not contain initial calibration curve files; the lab was contacted a new form was submitted. (OLM04.3 with Region III modifications.)

Holding Times

Sampling Date: 08/05-11/08
Received Date: 08/06-12/08
Extraction Date: 08/13-15/08
Analysis Dates: 08/14-18/08

Cooler Temp: 0.4°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of DFTPP.

No qualifications required for the initial calibration.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

No contamination was exhibited in the method blanks. The QC blanks associated with this SDG were: YS08-EB01-081108 (no positive results) and YS08-EB01-081308 (no positive results)- equipment blanks; YS08-FB01-0081108 (no positive results) - field blank.

The associated method and QC blanks exhibited contamination for TICs. All B flagged TICs in the field samples are flagged B and crossed out in accordance with the Region III modifications to the National Functional Guidelines.

Surrogates

All criteria were met.

Laboratory Control Sample

An LCS was not submitted for this data package.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for samples YS08-GW09A-0808 and YS08-GW08-0808—no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for sample YS08-GW09-0808—no positive results were exhibited, no qualifications required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Masenko **Date:** 9/27/08

Initial Calibration Date: 8/14/2008

RRF and %RSD Calculations:

Compound Name: phenol
Lab Value: 1.717

Area of Compound	1209212
Area of Internal STD	176100
Conc. of Internal STD	40
Conc. of Compound	160
Calculated RRF	1.717

Compound Name: benzo(g,h,i)perylene
Lab Value: 4.7

RRF of STD 1	1.170
RRF of STD 2	1.251
RRF of STD 3	1.316
RRF of STD 4	1.268
RRF of STD 5	1.315
Calculated % RSD	4.73

Continuing Calibration File ID: 8/18/2008

RRF and %D Calculations:

Compound Name: 2-methylphenol
Lab Value: 1.202

Area of Compound	266659
Area of Internal STD	177449
Conc. of Internal STD	40
Conc. of Compound	50
Calculated RRF	1.202

Compound Name: chrysene
Lab Value: 3.9

Average RRF	1.103
Calibration Check RRF	1.146
Calculated % D	-3.90

SAMPLE CALCULATION

Sample ID: YS08-GW09A-0808 MSD
Standard ID: 8/14/2008
Compound: phenol
Concnetration: 50 ug/L

	Water (ug/L)	Soil (ug/Kg)
Area of Compound	578832	
Area of Internal STD	135986	
Conc. of Internal (ng)	40	2
RRF of Compound	1.669	
Final Volume	1000	1000
Dilution Factor	1	1
GPC Factor	NA	1
Injection Volume	2	1
Weight of Sample	NA	
Initial Volume of Sample	1020	NA
% Moisture	NA	
Concentration	50.0	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	4.794	4.441	0.926
Standard	4.797	4.439	0.925

Jacqueline Cleveland

From: DataQual [dataqual@charter.net]
Sent: Thursday, October 02, 2008 6:39 PM
To: Jackie Cleveland
Subject: Fw: request for SVOA SDG#YORK23

----- Original Message -----
From: Page, Abbie
To: DataQual
Cc: Chelsea Bennet
Sent: Thursday, October 02, 2008 2:51 PM
Subject: RE: request for SVOA SDG#YORK23

Laura,

The missing form is provided.

If you prefer we re-submit the form with the complete SVOC portion, please let me know. We can accommodate this.

Regards,
Abbie

From: DataQual [mailto:dataqual@charter.net]
Sent: Monday, September 29, 2008 3:00 PM
To: Page, Abbie
Cc: Chelsea Bennet
Subject: request for SVOA SDG#YORK23

Dear Abbie,

In the data package for the SVOA fraction for SDG#YORK23 there is not a Form V with the initial calibration files listed. Could you please submit a Form V that identifies the initial calibration files? If there are any questions please feel free to contact me.

Thank you,
Laura

Laura Maschhoff
DataQual Environmental Services, LLC
5830 Amberway Drive
St. Louis, MO 63128
314-330-1327
dataqual@charter.net

Confidentiality Notice: The information contained in this message is intended only for the use of the addressee, and may be confidential and/or privileged. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately.

Please consider the environment before printing this e-mail.

Holding Times

Sampling Date: 8/11, 8/13
Received Date: 8/12, 8/14
Extraction Date: 8/15
Analysis Dates: 9/4

Cooler temps OK, receipt documentation present.
Holding time requirements were met.

All extraction and analysis holding times were met.

Calibrations

Initial calibrations were performed according to the CLP method with a three-point curve for all single component pesticides and a single point for toxaphene. Single point injections were analyzed for the aroclors. Calibration factors were calculated. %RSDs were within QC limits. Continuing calibration standards were analyzed per the CLP method. All PEM breakdowns and %D criteria were met. All INDA/INDB %D criteria were within QC limits. Column resolution criteria were met. Retention time windows were provided. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Raw data was verified.

Initial Calibration Date: 9/5/08
CF and %RSD Calculations: **Sequence 9/5/08 on GC1, RTX-50 & RTX-1701**

Compound Name: AR1260, single point
Lab Value: 4521940

Area of Compound	452194
Conc. of Compound	0.1
Calculated CF	4521940

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample, and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is less than five times (5X) the blank value. (Region III)

No contamination was reported in the associated method blank or instrument blanks. The associated field QC blanks did not exhibit target compound contamination.

Blank ID	Compound	Concentration	Action Level	Q Flag

SURROGATE RECOVERIES

All surrogate recoveries were acceptable. The samples did not require qualification.

MATRIX SPIKE/MATRIX SPIKE DUPLICATES

The MS/MSD pair of sample YS08-GW09A-0808 exhibited acceptable recoveries for all compounds. No qualifications were required.

LABORATORY CONTROL SAMPLES

There was no LCS sample submitted for this SDG.

FIELD DUPLICATE SAMPLE SUMMARY

Compound	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!

Sample ID: **YS08-GW09-0808** **Duplicate ID:** **YS08-GW09P-0808**
Comments: No positive results

SAMPLE RESULT VERIFICATION

Reported sample results and raw data were verified. Reported P flagged results were qualified as estimated J.

SAMPLE CALCULATION

EPA SAMPLE ID: YS08-GW09A-0808MS,
STANDARD ID: ICAL 9/5/08, mid-level CF, RTX-50
COMPOUND: AR1260
CONCENTRATION: 9.7 ug/L (ave of 5 peaks), 9.1 – peak 1

	Water (ug/L)	Soil (ug/Kg)
Area of Compound	8143514	
CF of Compound	8887680	
Final Volume (ul)	10000	
Dilution Factor	1	
GPC Factor	na	
Injection Volume	1	
Weight of Sample	na	
Initial Volume of Sample (ml)	1000	NA
Dryness Factor	na	
Concentration (peak 1)	9.163	

Reviewer J. Cleveland **Date:** 10/4/08

Holding Times

Sampling Date: 8/11, 8/13
Received Date: 8/12, 8/14 Cooler temps OK, receipt documentation present.
8/13, 8/15 at subcontractor (West Sacramento)
Extraction Dates: 8/14/08, 8/18
Analysis Dates: 8/14/08, 8/20/08, 8/21/08

Sample receipt documentation was in order. All extraction and analysis holding time requirements were met.

Calibrations

The samples in this SDG were analyzed according to SW-846 methods 8330. Initial calibrations were performed with a standard six to eight-point curve for all target compounds. Curve calibration factors were calculated or linear regression curves were plotted. %RSDs or correlation coefficients were within QC limits. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met. Raw data was verified. No qualifications were required due to unmet initial or continuing calibration criteria.

Initial Calibration Date: 4/16/08, Instrument LC10 C-18 column
CF and %RSD Calculations:

Compound Name: HMX in level 1
Lab Value: 126

Area of Compound	632
Conc. of Compound	5
Calculated CF	126.4

Compound Name: HMX
Lab Value: 3.353

CF of STD 1	126
CF of STD 2	138
CF of STD 3	125
CF of STD 4	127
CF of STD 5	126
CF of STD 6	127
CF of STD 7	126
CF of STD 8	126
% RSD	3.323

Continuing Calibration File ID:
CONC. and %D Calculations:

Compound Name: 2,4,6-trinitrotoluene, 8/20/08, 6:07 std5 on LC10
Lab Value: 100.4

Area of Compound	14949
avg. CF	149
calculated amount	100.33

Compound Name: 2,4,6-trinitrotoluene, 8/20/08, 6:07 std5 on LC10
Lab Value: 0

nominal amount	100.
calculated amount	100.33
% D	0.3

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:

No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

No contamination was reported in the associated laboratory blanks. The associated field and rinse QC blanks did exhibit target compound contamination that resulted in qualification of the data. Nitrobenzene was qualified as B in sample YS08-GW07-0808.

SURROGATE RECOVERIES

All surrogate recovery criteria were met with the exception of YS08-GW08-0808. The surrogate in this sample was diluted out. No qualifications were required.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS08-GW09A-0808 exhibited non-compliant recoveries for nitrobenzene. There were no qualifications required because of this non-compliance. The LCS samples provided with this SDG exhibited acceptable recoveries for all compounds.

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS08-GW09-0808 Duplicate Sample ID: YS08-GW09P-0808

Compound	Sample Conc.	Duplicate Conc.	RPD
4-amino-2,6-dinitrotoluene	1.2	1.1	9%
2-amino-4,6-dinitrotoluene	0.7	0.67	4%
HMX	1.8	1.7	6%
RDX	2.4	2.3	4%
1,3,5-trinitrobenzene	0.32	0.31	3%
2,4,6-trinitrotoluene	0.95	0.87	9%

Comments: No qualifications were required.

SAMPLE RESULT VERIFICATION

Positive results above the reporting limits were reported in the field samples analyzed in this SDG. Some results exhibited column quantitation %Ds greater than 40% (flagged with G by lab). These results were qualified as estimated J. Raw data was verified.

EPA SAMPLE ID: YS08-GW09-0808 (LAB ID – KT39J1AA)
STANDARD ID: ICAL 4/16/2008 LC10
COMPOUND: RDX
CONCENTRATION: 2.4 ug/L

	Water (ug/L)	Soil (mg/Kg)
Area of Compound	10339	
CF of Compound	83.95775	
Final Volume (ml)	20	
Dilution Factor	1	
Weight of Sample	NA	
Initial Volume of Sample	1020	NA
conversion factor (ug to mg)	NA	
	2.4146	

Reviewer J Cleveland **Date:** 10408

YS08-GW09A-0808

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: G8H130275
MS Lot-Sample #: G8H130275-006
Date Sampled...: 08/11/08
Prep Date.....: 08/14/08
Prep Batch #...: 8227313
Dilution Factor: 0.97

Work Order #...: KT39N1AD-MS
KT39N1AE-MSD
Date Received..: 08/13/08
Analysis Date..: 08/20/08

Matrix.....: WATER

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2-Amino-4,6-dinitrotoluene	ND	0.976	0.995	ug/L	102		SW846 8330
	ND	0.970	0.986	ug/L	102	0.88	SW846 8330
4-Amino-2,6-dinitrotoluene	ND	0.976	0.993	ug/L	102		SW846 8330
	ND	0.970	0.988	ug/L	102	0.58	SW846 8330
1,3-Dinitrobenzene	ND	0.976	1.00	ug/L	103		SW846 8330
	ND	0.970	0.992	ug/L	102	0.92	SW846 8330
2,4-Dinitrotoluene	ND	0.976	1.02	ug/L	104		SW846 8330
	ND	0.970	1.00	ug/L	104	1.1	SW846 8330
2,6-Dinitrotoluene	ND	0.976	1.02	ug/L	104		SW846 8330
	ND	0.970	1.00	ug/L	104	0.99	SW846 8330
HMX	ND	0.976	1.00	ug/L	103		SW846 8330
	ND	0.970	1.01	ug/L	104	0.39	SW846 8330
Nitrobenzene	ND	0.976	1.68	ug/L	172 a		SW846 8330
	ND	0.970	1.73	ug/L	179 a	3.4	SW846 8330
2-Nitrotoluene	ND	0.976	0.948	ug/L	97		SW846 8330
	ND	0.970	0.944	ug/L	97	0.41	SW846 8330
3-Nitrotoluene	ND	0.976	0.965	ug/L	99		SW846 8330
	ND	0.970	0.939	ug/L	97	2.8	SW846 8330
4-Nitrotoluene	ND	0.976	0.980	ug/L	100		SW846 8330
	ND	0.970	0.967	ug/L	100	1.3	SW846 8330
RDX	ND	0.976	0.986	ug/L	101		SW846 8330
	ND	0.970	0.978	ug/L	101	0.79	SW846 8330
Tetryl	ND	0.976	0.901	ug/L	92		SW846 8330
	ND	0.970	0.882	ug/L	91	2.0	SW846 8330
1,3,5-Trinitrobenzene	ND	0.976	0.954	ug/L	98		SW846 8330
	ND	0.970	0.943	ug/L	97	1.1	SW846 8330
2,4,6-Trinitrotoluene	ND	0.976	0.904	ug/L	93		SW846 8330
	ND	0.970	0.888	ug/L	92	1.7	SW846 8330
Nitroglycerin	ND	4.88	4.86	ug/L	99		SW846 8330
	ND	4.85	4.93	ug/L	102	1.5	SW846 8330
PETN	ND	4.88	5.36	ug/L	110		SW846 8330
	ND	4.85	6.69	ug/L	138 a	22	SW846 8330
3,5-Dinitroaniline	ND	0.976	0.986	ug/L	101		SW846 8330
	ND	0.970	0.979	ug/L	101	0.77	SW846 8330

NQ - Not in native sample
JLC 10/08

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: G8H130275 Work Order #...: KT39N1AD-MS Matrix.....: WATER
MS Lot-Sample #: G8H130275-006 KT39N1AE-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	99	(48 - 143)
	100	(48 - 143)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

This SDG contains total and dissolved metals, mercury and cyanide analysis using ILM05.3. Please note that method criteria were used to assess all calibration standards because Region III does not have a validation document for the ILM05.3 SOW. Region III qualification conventions and qualifiers were used.

HOLDING TIMES

Sampling Date: 8/11/08, 8/13/08
Received Date: 8/12/08, 8/14/08 Cooler temps OK, receipt documentation present.
Prep. Dates: 8/21, 9/9 ICP, 9/3 Hg, 8/21 CN All holding time requirements were met.
Analysis Dates: 9/9-9/10 ICP, 9/4 Hg, 8/21 CN

CALIBRATIONS

An initial calibration single point calibration was analyzed for ICP metals. Initial calibration curve was analyzed for Hg and CN. All initial calibration criteria were met. Calibration verification criteria were met for all ICV and CCV standards. The ICSAB standards exhibited acceptable recoveries for all analytes. The CRI check standards were analyzed and met method criteria. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

No Action - The sample result is greater than the CRDL and greater than five times (5X) the blank value.

B - The sample result is greater than or equal to the MDL but less than or equal to the CRQL, result is reported as non-detect at the CRQL.

L/UL- The sample result is ≤10X the analyte IDL and the blank result is negative in several blanks (>|-IDL| but <|-CRDL|).

Blank ID	Analyte	Concentration	Action Level	Q Flag
PBLK	cadmium	0.821J ug/L	4.105 ug/L	B
	iron	20.680J ug/L	103.4 ug/L	B
	manganese	1.495J ug/L	7.475 ug/L	B
	zinc	3.825J ug/L	19.125 ug/L	B
ICB/CCB.	nickel	1.013JJ ug/L	5.065 ug/L	B
	nickel	1.273J ug/L	6.365 ug/L	B
	cyanide	1.003J ug/L	5.015 ug/L	B
	mercury	-0.101J ug/L	≤10X MDL (0.028 ug/L)	L/UL
	mercury	-0.087J ug/L	≤10X MDL (0.028 ug/L)	L/UL
YS08-FB01-081108	cyanide	2.9Jug/L	14.5 ug/L	B
	silver	1.1J ug/L	5.5 ug/L	B
	copper	2.1J ug/L	10.5 ug/L	B
YS08-EB01-081108	vanadium	0.76J ug/L	3.8 ug/L	B
YS08-EB01-081308	copper	4.1J ug/L	20.5J ug/L	B
YS08-FB01-081108F	silver	1.1J ug/L	5.5 ug/L	B
	arsenic	2.6J ug/L	13 ug/L	B
	cobalt	0.43J ug/L	2.15 ug/L	B

Blank ID	Analyte	Concentration	Action Level	Q Flag
YS08-EB01-081108F	vanadium	0.79J ug/L	3.95 ug/L	B
YS08-EB01-081308F	copper	3.0J ug/L	15 ug/L	B

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB, if less than the analyte CRDL, is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

See validation report for specific samples and qualifications.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MD pair in this SDG exhibited compliant recoveries for all compounds. All associated LCS samples exhibited acceptable recoveries for all analytes. No qualifications were required.

SERIAL DILUTIONS

The serial dilution analysis exhibited compliant %Ds for all analytes. No qualifications were required.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL.

Sample ID: YS08-GW09-0808 Duplicate Sample ID: YS08-GW09P-0808

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	293	339	15%
calcium	126000	130000	3%
iron	767	742	3%
manganese	210	213	1%
lead	11600	12000	3%

Sample ID: YS08-GW09-0808F Duplicate Sample ID: YS08-GW09P-0808F

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	124000	126000	2%
manganese	201	202	0%
sodium	11700	11800	1%

Comments: No qualifications required

SAMPLE CALCULATION

EPA SAMPLE ID: YS08-GW07-0808
COMPOUND: arsenic
CONCENTRATION: 11.5 ug/L
%Solids – NA
100ml to 100 ml
Raw Data result: 11.5 ug/L
Water results are direct read from instrument.

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the IDL and the CRDL were qualified as estimated, J by the laboratory.

Reviewer Jacqueline Cleveland **Date:** 10/4/08

3-IN
BLANKS

:b Name: TestAmerica Burlington Contract: 28000

:b Code: STLV Case No.: 28000 NRAS No.: _____ SDG NO.: YORK23

:eparation Blank Matrix (soil/water): WATER

:eparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Cyanide	1.003	J	1.070	J	1.242	J	0.863	J	10.000	U	AS

all assoc.

flag as noted but report.

JAC 100108

USEPA - CLP FORMS

3-IN
BLANKS

ab Name: TestAmerica Burlington Contract: 28000

ab Code: STLV Case No.: 28000 NRAS No.: _____ SDG NO.: YORK23

eparation Blank Matrix (soil/water): WATER

eparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	0.200	U	-0.101	J	0.200	U	0.200	U	0.200	U	CV

07-0808
07-0808F
09-0808

✓ flag as noted in report
JAC 100108

3-IN
BLANKS

ıb Name: TestAmerica Burlington Contract: 28000

ıb Code: STLV Case No.: 28000 NRAS No.: _____ SDG NO.: YORK23

:eparation Blank Matrix (soil/water): WATER

:eparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury			-0.087	J							CV

4

08-0808
08-0808F

✓ flag as noted in report
JAC 10/08

3-IN
BLANKS

ab Name: TestAmerica Burlington Contract: 28000

ab Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

reparation Blank Matrix (soil/water): WATER

reparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	P
Aluminum	200.000	U	200.000	U	200.000	U	200.000	U	200.000	U	P
Antimony	60.000	U	60.000	U	60.000	U	3.316	J NQ	60.000	U	P
Arsenic	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	P
Barium	200.000	U	200.000	U	200.000	U	200.000	U	200.000	U	P
Beryllium	5.000	U	5.000	U	5.000	U	-0.328	J NQ	5.000	U	P
Calcium	5000.000	U	5000.000	U	-83.900	J NQ	5000.000	U	5000.000	U	P
Cadmium	5.000	U	5.000	U	5.000	U	5.000	U	0.821	J	P
Cobalt	50.000	U	50.000	U	50.000	U	50.000	U	50.000	U	P
Chromium	10.000	U	10.000	U	10.000	U	10.000	U	10.000	U	P
Copper	25.000	U	25.000	U	25.000	U	25.000	U	25.000	U	P
Iron	100.000	U	100.000	U	100.000	U	100.000	U	20.680	J	P
Magnesium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Manganese	15.000	U	15.000	U	15.000	U	15.000	U	1.495	J	P
Sodium	56.690	J NQ	5000.000	U	5000.000	U	5000.000	U	69.070	J	P NQ
Nickel	1.013	J	40.000	U	40.000	U	40.000	U	40.000	U	P
Potassium	5000.000	U	5000.000	U	5000.000	U	5000.000	U	5000.000	U	P
Selenium	35.000	U	35.000	U	35.000	U	35.000	U	35.000	U	P
Thallium	25.000	U	25.000	U	25.000	U	25.000	U	25.000	U	P
Vanadium	50.000	U	50.000	U	50.000	U	50.000	U	50.000	U	P
Zinc	60.000	U	60.000	U	60.000	U	60.000	U	3.825	J	P

✓ flag as noted in report

GW07-0808
GW07-0808F
GW09-0808
GW09-0808F

GW09-0808
GW09P-0808F
GW09A-0808
~~GW08-0808F~~
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GW09A-0808F
GW08-0808
GW08-0808F

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USEPA - CLP FORMS

3-IN
BLANKS

Lab Name: TestAmerica Burlington Contract: 28000

Lab Code: STLV Case No.: 28000 NRAS No.: SDG NO.: YORK23

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank(ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Silver			1.892	J	10.000	U					P
Aluminum			200.000	U	-71.640	J					P
Antimony			60.000	U	60.000	U					P
Arsenic			10.000	U	10.000	U					P
Barium			200.000	U	200.000	U					P
Beryllium			5.000	U	5.000	U					P
Calcium			5000.000	U	-98.950	J					P
Cadmium			5.000	U	5.000	U					P
Cobalt			50.000	U	50.000	U					P
Chromium			10.000	U	10.000	U					P
Copper			1.740	J	25.000	U					P
Iron			29.230	J	100.000	U					P
Magnesium			5000.000	U	5000.000	U					P
Manganese			0.486	J	0.191	J					P
Sodium			5000.000	U	5000.000	U					P
Nickel			1.273	J	40.000	U					P
Potassium			5000.000	U	5000.000	U					P
Selenium			35.000	U	35.000	U					P
Thallium			25.000	U	25.000	U					P
Vanadium			50.000	U	50.000	U					P
Zinc			60.000	U	60.000	U					P

4 5 See Field BC

See Field BC

NQ

GW09A-0808F
GW08-0808
GW08-0808F

none assoc.

✓ flag as noted in report

JAC 100108

CompuChem MICROBIAL INSIGHTS
a division of Liberty Analytical Corp.

CHAIN OF CUSTODY

(1 cooler)

501 Madison Ave
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 1 of 1

Courier: FedEx
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: YORKTOWN NWS
Address: 5700 CLEVELAND St #101	Sampling Location: SITE 8
City: VA BEACH State: VA Zip: 23462	Turnaround time: STD
Project Contact: CHELSEA BENNET	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671 6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: MARK CST	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analyses (include method and bottle type): Dehalococcoides

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	Dehalococcoides	pH / Sample Info (Lab Use)
027EKI	YS08-GW01-1107	11/13/07	1315	GW	1							1	

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: [signature]	Date/Time: 11/13/07 1800	Received by: [signature]	Date/Time: 11-14-07 10:00
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On ice? Y or N
Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CompuChem
a division of Liberty Analytical Corp.

MICROBIAL
IN8104

CHAIN OF CUSTODY

501 Madison Ave
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

1 cooler

Courier
Airbill
Sampli

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: YORKTOWN NWS
Address: 5700 CLEVELAND St #101	Sampling Location: Site 8
City: VABCH State: VA Zip: 23462	Turnaround time: Std
Project Contact: CHELSEA BENNET	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-6200	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: Mark Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include meth

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	Dehalococcoides					
027EK2	YS08-GW06-1107	11/14/07	1250	GW	1							1					

Lab Use Only

Sample Unpacked By:	Cyanide samples checked for sulfide & chlorine? Y or NA
Sample Order Entry By:	625 & Phenol samples checked for chlorine? Y or NA
Samples Received in Good Condition? Y or N	608 samples checked for pH between 5.0-9.0? Y or NA
If no, explain:	

Sample Custody

Relinquished by: [signature]	Date/Time: 11/14/07 1715	Received by:
Relinquished by:	Date/Time:	Received by:
Subcontact? Y or N If yes, where?	Custody Seal(s) intact? Y or N	On Ice? Y or N

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy

CTO - 195

Savannah

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

CHAIN OF CUSTODY RECORD

Report to:
Company: CH2M Hill
Address: 5700 Cleveland St, Suite 101
Virginia Beach, VA 23462
Contact: Chelsea Bennet
Phone: 757-671-6208
Fax:
Contract/Quote: CTO - 195

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: David Livingston
Sampler's Signature:

Proj. No.:
Project Name: NWS Yorktown

ANALYSIS REQUESTED: VOC (40 ml vial); SVOC (1-L Amber); Alkalinity (500 ml Poly); VOC (2 oz jar); SVOC (4 oz jar)

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2]: VOA	A/G 1 Lt.	250 ml	P/O	VOC (40 ml vial)	SVOC (1-L Amber)	Alkalinity (500 ml Poly)	VOC (2 oz jar)	SVOC (4 oz jar)	Lab/Sample ID (Lab Use Only)
SW	12/11/07	1020		X	YBG-SW04-1207	3	2		1	3	2	1			
SD	12/11/07	1030		X	YBG-SD04-1207				2				1	1	
SW	12/11/07	1120		X	YBG-SW05-1207	3	2		1	3	2	1			
SD	12/11/07	1130		X	YBG-SD05-1207				2				1	1	680-32635
SW	12/11/07	1345		X	YS08-SW01-1207	9	6		3	9	6	3			
SD	12/11/07	1355		X	YS08-SD01-1207				6				3	3	
EB	12/11/07	1575		X	YS08-EB01-121107	2	2			2	2				Equipment blank
TB	12/11/07				YBG-TB01-121107	2				2					Trip blank

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	12/11/07	1830			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			FARL I HALL	121207	0923
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: MS/MSD collected for YS08-SW01-1207 and YS08-SD01-1207

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater; W - Water; S - Soil; L - Liquid; A - Air bag; C - Charcoal Tube; SL - Sludge; O - Oil
[2]Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

CW-195

Serial Number 002065

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: NWS Yorktown Site 30	PROJECT NO.: 362248.FI.MW	PROJECT LOCATION (STATE): VA	PAGE 1 OF 1
TAL (LAB) PROJECT MANAGER: Abbie Page	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY ○
CLIENT (SITE) PM: Bill Friedmann	CLIENT PHONE: 757-671-8311	CLIENT FAX: 757-497-6285	DATE DUE: Per Contract
CLIENT NAME: CH2M HILL	CLIENT E-MAIL:		EXPEDITED REPORT DELIVERY (SURCHARGE) ○
CLIENT ADDRESS: 5700 Cleveland St. Suite K1 Virginia Beach, VA 23462			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable):			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSIS: Total Sepiolite Tars; VOCs (MeOH) 4.3

PRESERVATIVE: HCl

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	NUMBER OF CONTAINERS SUBMITTED	REMARKS
8/5/08	1200	VS30-DW01-0808	G	✓				3	
8/5/08	1205	VS30-TB01-080508	G	✓				3	

TEMP.: 0.4

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	8/5/08	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	080608	0850	YES ○ NO ○		~~68039197~~ 39198	

TAL8240-680 (1207)

CTO 195

Serial Number 002062

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

◯ TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

◯ Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
NWS YORKTOWN SITE 8	362 248: PLMW	
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
–		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Laura Cook	757 671 8311	757 497 6885
CLIENT NAME	CLIENT E-MAIL	
CH2M HILL		
CLIENT ADDRESS		
5700 Cleveland ST SUITE 101 VA BEACH VA 23462		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE ___ OF ___

STANDARD REPORT DELIVERY ◯
DATE DUE ___
EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE ___
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOC 8260/4.3	CANS 300.0	Alkalinity 310.1	TOC 9060	SVOCs 8270/4.3	MCE 1656/175	PCBs	TOTAL METALS	F. METALS	SULFIDE 376.1	REMARKS
								HCl	–	–	HCl	–	~~HCl~~	–	HNO_3	HNO_3	ZN ACET	
								NUMBER OF CONTAINERS SUBMITTED										
8/11/2008	1005	YS08-GW07-0808		X				3	1	1	1	2	3	2	1	1	2	Savannah → CANS, VOC, Alkalinity, TOC, Sulfide, MCE Burlington → metals, F. metals, PCBs, cyanide, explosives, nitroguanidine
	1145	YS08-EB01-081108		X				3	1	1	1	2	3	2	1	1	2	
	1200	YS08-FB01-081108		X				3	1	1	1	2	3	2	1	1	2	
	1640	YS08-GW09-0808		X				3	1	1	1	2	3	2	1	1	2	
	1645	YS08-GW09P-0808		X				3	1	1	1	2	3	2	1	1	2	
	1405	YS08-GW09A-0808		X				9	3	3	3	6	9	6	3	3	6	
	1010	YS08-TB01-081108		X				3										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Angela Pelton	8/11	2000						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
KL	8/12/08	0858	YES ◯ NO ◯		680-39416	2.0 | 2.2 | 2.2 | 2.6

TAL8240-680 (1207)

09/09/2008

CTO 195

Serial Number 002063

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: NWS Yorktown Sites	PROJECT NO.: 362248.PI.MW	PROJECT LOCATION (STATE):
TAL (LAB) PROJECT MANAGER:	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Laura Cook	CLIENT PHONE: 757.671.8311	CLIENT FAX: 757.497.6885
CLIENT NAME: CH2M HILL	CLIENT E-MAIL: —	
CLIENT ADDRESS: 5700 Cleveland St Suite 101 VA Beach, VA 23462		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE ___ OF ___

STANDARD REPORT DELIVERY ◯ DATE DUE ___

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯ DATE DUE ___

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOCs 8260	CVAS 3070	alkalinity 310.1	TOC 9060	SVOC 8270	sulfide 376.1	MCC PSA-175	PCB	T. metal	F. metals	REMARKS
								HCl	—	—	HCl	—	Zn Acet.	—	—	HNO_3	HNO_3	
8/11/2008	1005	YS08-GW07-0808		✓				3	1	1	1	2	2	3	2	1	1	MCC
	1145	YS08-EB01-081108		✓				3	1	1	1	2	2	3	2	1	1	CVAS,
	1200	YS08-FB01-081108		✓				3	1	1	1	2	2	3	2	1	1	TOC
	1640	YS08-GW09-0808		✓				3	1	1	1	2	2	3	2	1	1	Savannah - VOCs, SVOC,
	1645	YS08-GW09P-0808		✓				3	1	1	1	2	2	3	2	1	1	sulfide, alkalinity,
	1405	YS08-GW09A-0808		✓				9	3	3	3	6	6	9	6	3	3	Burlington - metals, F metals
	1010	YS08-TB01-081108		✓				3										PCBs, cyanide, explosives,
																		nitrogenamine

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Angela Petrie	8/11	2000						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
KL	8/12/08	0858	YES ◯ NO ◯		680-39416	

TAL8240-680 (1207)

CTO 195

GPL LABORATORIES, LLLP

7210A Corporate Court
Frederick, MD 21703
(301) 694-5310
Fax (301) 620-0731

Contract #/Billing Reference

Project: NWS Yorktown Site 8 362248.F1.MW
Client: CH2MHILL
Send Results To: Laura Cook
Address: 5700 Cleveland St Suite 101
Virginia Beach, VA 23462
Phone: 757.671.8311

Turnaround Time: per contract
Type of Analysis: Cyanide; Explosives, Petn, DNA, Na; Nitroguanidine

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Cyanide	Explosives, Petn, DNA, Na	Nitroguanidine	Lab Cooler No.	CLIENT COMMENTS
					# of Containers: 1	2	2		
					Container Type: 250 poly	1L Amb	1L Amb		
					Preservative Used: ~~HCl~~ NaOH	—	—		
YS08-GW07-0808	8/11/08	1005	aq	AP/MP	1	2	2		all analysis on this pg by Burlington
YS08-EB01-081108	↓	1145	↓	↓	1	2	2		
YS08-FB01-081108	↓	1200	↓	↓	1	2	2		
YS08-GW09-0808	↓	1040	↓	↓	1	2	2		
YS08-GW08F-0808	↓	1645	↓	↓	1	2	2		
YS08-GW08A-0808	↓	1405	↓	↓	3	6	6		
YS08-TB01-081108	↓	1010	↓	↓					

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
Angela Petru	8/11 2000				

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:

G.P. W.O. _____

CTD 195

GPL LABORATORIES, LLC

7210A Corporate Court
Frederick, MD 21703
(301) 694-5310
Fax (301) 620-0731

Contract #/Billing Reference

2 of 2 Pgs.

Project: NWS YORKTOWN SITE 8 31022148.F1.MW
Client: CH2MHILL
Send Results To: LAURA COOK
Address: 5100 CLEVELAND ST. SUITE 101
VA BEACH, VA 23462
Phone: 757.671.8311

Turnaround Time: per contract

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	Cyanide	Cyno, Meth, DNA, Nat	Nitroguanidine								CLIENT COMMENTS
# of Containers					1	2	2								
Container Type					250 POLY	AMB	AMB								
Preservative Used					NaOH	—	—								
Lab Cooler No.															
YS08-GW07-0808	8/11/08	1005	GW	dp/MP	1	2	2								all analysis
YS08-EB01-081108		1145			1	2	2								on THIS
YS08-FB01-081108		1200			1	2	2								pg BY
YS08-GW07-0808		1640			1	2	2								Barrington
YS08-GW07P-0808		1645			1	2	2								
YS08-GW08A-0808		1405			3	6	6								
YS08-TB01-081108		1010													

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
Angela Petre	8/11 2000				

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:

G.P. W.O. _____

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDGs affected

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: August 12, 2008

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station, CTO-195.

Some sample IDs were listed incorrectly on the COCs for samples collected on August 11, 2008 and need to be corrected in the lab hardcopy report, and any electronic deliverables.

- All groundwater samples on the COCs begin 'YS08-gw…'. Please ensure that all letters in the sample IDs are capitalized when they are logged in. Groundwater sample IDs should begin 'YS08-GW…'.

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CTO 195

18970

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information

Company Name: ~~Angela Lee~~ CH2MHILL
Address: 5700 Cleveland St Suite 101
City: VA Beach State: VA Zip: 23462
Project Contact: Laura Cook
Phone #: 757 671 8311
Sampler's Name: David Livingston / Angela Petree

Project Information

Project Name: NWS Yorktown Site 8 CTO 195
Sampling Location: Site 8 PN: 362248.F1.MW
Turnaround time: per contract
Batch QC or Project Specific? If Specific, which Sample ID?: TB01 & EB01
Are aqueous samples field filtered for metals? Y or N: Fil. Metals
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3	SVOCs OLM04.3	Alkalinity 310	TOC 9060	CNNS 300.0	Sulfide 376.1	MEE RSK-175	PCB	Total Metals	Fil. Metals	pH / Sample Info (Lab Use)
	YS08-GW08-0808	8/13/08	1450	aq	17	4		2			2	3	2	1	1	1	2	3	2	1	1	
	YS08-TB01-081308	↓	1505	↓	3	3		~~2~~			~~2~~	3										
	YS08-EB01-081308	↓	1515	↓	17	4	1	2			2	3	2	1	1	1	2	3	2	1	1	
																				68039523		

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Savannah: VOCs, SVOCs, CNNS, MEE, Sulfide, TOC, Alkalinity
Burlington: Metals, F. metals, PCB, cyanide, explosives, nitroglycerine

Sample Custody

Relinquished by: Angela Petree	Date/Time: 8/13/08 1800	Received by: [signature]	Date/Time: 081408 0855
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

09/08/2008

CTO 195

18971

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2MHILL
Address: 5700 Cleveland St, Suite 101
City: Va Beach State: VA Zip: 23462
Project Contact: Laura Cook
Phone #: 757 671 8311
Sampler's Name: David Livingston | Angela Petree

Project Information

Project Name: NWS Yorktown Site 8 CTO 195
Sampling Location: Site 8 PN: 362248.F1.MW
Turnaround time: per contract
Batch QC or Project Specific? If Specific, which Sample ID?: EB01 & TB01
Are aqueous samples field filtered for metals? Y or N: FIL METALS
Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	Cyanide	EXPLO/PETN/DNA/Nitroglycerine	Nitroguanidine	pH / Sample Info (Lab Use)
	YS08-GW08-0808	8/13/08	1450	aq	5		1					1	2	2	
	YS08-TB01-081308	↓	1525	↓	—										
	YS08-EB01-081308	↓	1515	↓	5							1	2	2	

TEMP: 1.0

68039523

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

all analysis on this page by Burlington

Sample Custody

Relinquished by:	Date/Time:	Received by:	Date/Time:
Angela Petree	8/13/08 1800	[illegible signature]	081408 0855

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO - 195

CompuChem
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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page _____ of _____

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M Hill
Address: 5700 Cleveland St Suite 101
City / State / Zip: Virginia Beach, VA 23462
Project Contact: Chelsea Bennet
Phone #: 757-671-6208
Sampler's Name: David Livingston

Project Information

Project Name: Remedial Investigation for Site 4, SSA 14
Sampling Location: NWS Yorktown, — Site 4, SSA 14
Turnaround time: P
Batch QC or Project Specific? If Specific, which Sample ID? Contract
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other	Pesticides + PCBs by OLM04.3	Total Metals by ILM05.3	Dissolved Metals by ILM05.3	Cyanide	Explo/PETN/3,5-DNA/Nitroglycerin	Nitroguanadine IAAP	pH / Sample Info (Lab Use)
	YS04-GW05-1107	11/7/07	0905	GW								6	3	3	3	6	6	
	YS04-EB01-110707	11/7/07	1055	EB								2	1	1	1	2	2	
	YSA14-GW01A-1107	11/7/07	1505	GW									1	1	1	2	2	
	YSA14-GW01AP-1107	11/7/07	1510	GW									1	1	1	2	2	

Lab Use Only

Sample Unpacked By: Jacqueline L Altman
Sample Order Entry By: Jacqueline L Altman
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

MS/MSD collected for YS04-GW05-1107 (not collected for wet chemistry)
* 5 coolers

Sample Custody

Relinquished by:	Date/Time: 11/7/07 1700	Received by: Jacqueline L Altman	Date/Time: 11/08/07 0930
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 1.1, 1.4, 2.0, 1.9, 3.1 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO - 195

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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page ____ of ____

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: Remedial Investigation for SSA 14
Address: 5700 Cleveland St, Suite 101	Sampling Location: NWS Yorktown - SSA 14
City / State / Zip: Virginia Beach, VA 23462	Turnaround time: Rush
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID? Contact
Phone #: 757-671-6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: David Livingston	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other	VOCs by OLM04.3	Alkalinity / CNNS	Sulfide	TOC 9060	MEE RSK 175						pH / Sample Info (Lab Use)
	YSA14-GW05-1107	11/8/07	1015	GW								9	1	1	2	3						
	YSA14-GW05A-1107	11/8/07	1200	GW								3	1	1	2	3						
	YSA14-EB01-110807	11/8/07	1230	EB								3										
	YSA14-GW01-1107	11/8/07	1445	GW								3										
	YSA14-FB01-110807	11/8/07	1500	FB								3										
	YSA14-TB01-110807	11/8/07		TB								2				2			6	80	3 1 8 2 2	

TEMP 1.0

Lab Use Only	
Sample Unpacked By:	Cyanide samples checked for sulfide & chlorine? Y or NA
Sample Order Entry By:	625 & Phenol samples checked for chlorine? Y or NA
Samples Received in Good Condition? Y or N	608 samples checked for pH between 5.0-9.0? Y or NA
If no, explain:	

Comments: MS/MSD collected for YSA14-GW05-1107

Sample Custody

Relinquished by: [signature]	Date/Time: 11/8/07 1730	Received by: [signature]	Date/Time: 1109070901
Relinquished by:	Date/Time:	Received by: KARL I HALL	Date/Time:
Subcontact? Y or N If yes, where?	Custody Seal(s) intact? Y or N	On Ice? Y or N	Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-195

CompuChem
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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page ____ of ____

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: Remedial Investigation for SSA 14
Address: 5700 Cleveland St, Suite 101	Sampling Location: NWS Yorktown - SSA 14
City: Virginia Beach, State: VA, Zip: 23462	Turnaround time: R
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757-671-6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: David Livingston	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type): VOCs by OLM043

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other	VOCs by OLM043	pH / Sample Info (Lab Use)
	YSA14-GW02-1107	11/9/07	1330	GW								3	
	YSA14-EB01-110907	11/9/07	1400	EB								3	
	YSA14-GW03-1107	11/9/07	1530	GW								3	
	YSA14-TB01-110907	11/9/07		TB								2	

0.2

Page 66 of 66

12/10/2007

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

680-31860

Sample Custody

Relinquished by:	Date/Time: 11/9/07 1700	Received by:	Date/Time: 1110070907
Relinquished by:	Date/Time:	Received by: KARL I HALL	Date/Time:
Subcontact? Y or N If yes, where?	Custody Seal(s) intact? Y or N	On Ice? Y or N	Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO – 145

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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page _____ of _____

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: Remedial Investigation for SSA14
Address: 5200 Cleveland St, Suite 401	Sampling Location: NWS Yorktown – SSA 14
City: Virginia Beach State: VA Zip: 23462	Turnaround time:
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757-671-6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: David Livingston	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other	Total Metals by ILM05.3	Dissolved Metals by ILM05.3	Cyanide	Expl/PETN/3,5-DNA/Nitroglycerin	Nitroguanidine IAAP	pH / Sample Info (Lab Use)
	YSA14-GW05-1107	11/8/07	1015	GW								3	3	3	6	6	
	YSA14-GW05A-1107	11/8/07	1200	GW								1	1	1	2	2	
	YSA14-EB01-110807	11/8/07	1230	EB								1	1	1	2	2	
	YSA14-GW01-1107	11/8/07	1445	GW								1	1	1	2	2	
	YSA14-FB01-110807	11/8/07	1500	FB								1	1	1	2	2	

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

MS/MSD Collected for YSA14-GW05-1107
* 4 coolers

Sample Custody

Relinquished by:	Date/Time: 11/8/07 1730	Received by:	Date/Time: 11/09/07 0930
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontact? Y or N If yes, where?	Custody Seal(s) intact? Y or N	On Ice? Y or N	Cooler Temp: 3.0, 3.7, 2.8, 2.9°C

Samples stored 60 days after date report mailed at no extra charge

White & Yellow copy to lab • Pink copy for customer

CTO-195

CompuChem
a division of Liberty Analytical Corp.

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page _____ of _____

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: Remedial Investigation for SSA 14
Address: 5200 Cleveland St, Suite 101	Sampling Location: NWS Yorktown - SSA 14
City: Virginia Beach State: VA Zip: 23462	Turnaround time:
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757-671-6208	Are aqueous samples field filtered ~~for metals?~~ Y or N
Sampler's Name: David Livingston	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other	Total Metals by ILM05.3	Dissolved Metals by ILM05.3	Cyanide	Explo/PETN/3,5-DNA/Nitroglycerin	Nitroguanidine IAPP	pH / Sample Info (Lab Use)
	YSA14-GW02-1107	11/9/07	1330	GW								1	1	1	2	2	
	YSA14-EB01-110907	11/9/07	1400	EB								1	1	1	2	2	
	YSA14-GW03-1107	11/9/07	1530	GW								1	1	1	2	2	
	YSA14-TB01-110907	11/9/07		TB													

Lab Use Only

Sample Unpacked By: JM
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

* 2 coolers

Sample Custody

Relinquished by:	Date/Time: 11/9/07 1700	Received by:	Date/Time: 11/10/7 1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO - 195

CompuChem
a division of Liberty Analytical Corp.

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page ____ of ____

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: Remedial Investigation for SSA 14
Address: 5700 Cleveland St, Suite 101	Sampling Location: NWS Yorktown - SSA 14
City: Virginia Beach, State: VA, Zip: 23462	Turnaround time: R
Project Contact: Chelsea Burnett	Batch QC or ~~Project Specific~~? If Specific, which Sample ID? C
Phone #: 757-671-6208	Are aqueous samples field filtered ~~for metals~~? Y or N
Sampler's Name: David Livingston	Are high concentrations expected? Y or N? If yes, which ID?

Requested Analyses (include method and bottle type): Dehalococoides

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

pH / Sample Info (Lab Use)

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MeOH	Other	Dehalococoides
DITEK 1	YSA14-GW05-1107	11/5/07	1015	GW								1
2	YSA14-GW05A-1107	11/5/07	1200	GW								1

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by:	Date/Time: 11/5/07 1730	Received by:	Date/Time: 11-9-07 9:30
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where? | Custody Seal(s) intact? Y or N | On Ice? Y or N | Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CompuChem
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CTO-195

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page ____ of ____

Courier
Airbill No.
Sampling Complete? Y or N

12/12/2007

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St, Suite 101
City: Virginia Beach State: VA Zip: 23462
Project Contact: Chelsea Bennet
Phone #: 757-671-6208
Sampler's Name: David Livingston

Project Information

Project Name:
Sampling Location: NWS Yorktown Site 4 + SSA 14
Turnaround time: 10
Batch QC or Project Specific? If Specific, which Sample ID? Contract
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices
GW - Ground Water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other	VOCs by OLM04.3	SVOCs by OLM04.3	TOC 9060	Cons / Alkalinity	Sulfide	MEE RSK 175	pH / Sample Info (Lab Use)
	YS04-GW05-1107	11/7/07	0905	GW								9	6	2	1	1	3	
	YS04-EB01-110707	11/7/07	1055	EB								3	2					
	YSA14-GW01A-1107	11/7/07	1505	GW								3						
	YSA14-GW01AP-1107	11/7/07	1510	GW								3						
	YS04-TB01-110707	11/7/07		TB								2					2	

TEMP: 2.0
608-31773

Page 139 of 139

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:
Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

MS/MSD collected for YS04-GW05-1107 (not collected for wet chemistry)

Sample Custody

Relinquished by:	Date/Time: 11/07/07 1700	Received by: KL	Date/Time: 11/8/07 0908
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CompuChem
a division of Liberty Analytical Corp.

SAVANNAH
1 COOLER

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier: Fedex
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M Hill
Address: 5700 Cleveland St Ste 101
City: Va Bch State: VA Zip: 23462
Project Contact: Chelsea Bennick
Phone #: 757 671 6208
Sampler's Name: M. Ost / C. Peterson

Project Information

Project Name: Yorktown NWS CTO 195
Sampling Location:
Turnaround time: Per Contract
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N: N
Are high concentrations expected? Y or N? If yes, which ID(s)?: N

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other N/A	VOC 01M04.3	SVOC 01M04.2	pH / Sample Info (Lab Use)
	YSA14-TB01-111207	11/12/07		TB	2	2						2	–	
	YSA14-FB01-111207		1200	FB	3	3						3	–	
	YSA14-GW04-1107		1230	GW	3	3						3	–	
	YS08-GW01A-1107		1530	GW	5	3					2	3	2	

3.6

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:
Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

'080 31887

Sample Custody

Relinquished by: Carol Peterson — Date/Time: 11/12/07 — Received by: [signature] — Date/Time: 11/13 0715
Relinquished by: — Date/Time: — Received by: FARL I [illegible] — Date/Time:
Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CompuChem
a division of Liberty Analytical Corp.

SAVANNAH 2 coolers

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 1 of 1

Courier: FedEx
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 CLEVELAND ST
City: VABCH State: VA Zip: 23462
Project Contact: CHELSEA BENNET
Phone #: 757 671 6208
Sampler's Name: MARK OST

Project Information

Project Name: YORKTOWN NWS
Sampling Location: SITE 8
Turnaround time: STD
Batch QC or Project Specific? If Specific, which Sample ID?: YS08-GW01-1107
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other N/A	TOC 9060	VOC OLM04.3	SVOC OLM04.3	MEE RSK175	ALK/CNNS	Sulfides					pH / Sample Info (Lab Use)
	YS08-GW01-1107	11/13/07	1315	GW	22	12		~~8~~	2		8	2	9	6	3	1	1	Run QAQC				
	YS08-GW03-1107		1540	GW	5	3					2	/	3	2	/	/	/					
	YS08-TB01-111307		—	TB	~~8~~ 4	4						/	2	/	2	/	/					
	YS08-EB01-111307		1600	RI	5	3					2	/	3	2	/	/	/					

TEMP. 1.6 / 2.9

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:
Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

680-31913

Sample Custody

Relinquished by: Carol Peterson — Date/Time: 11/13/07 1800 — Received by: [signature]
Relinquished by: — Date/Time: — Received by: KARL I HALL — Date/Time: ~~1113~~ 1114070913
Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

12/19/2007

CompuChem
a division of Liberty Analytical Corp.

SAVANNAH
2 coolers

CTO 195

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 1 of 1

Courier: Fed Ex
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: YORKTOWN NWS
Address: 5700 CLEVELAND ST #101	Sampling Location: SITE 8
City: VA BCH State: VA Zip: 23462	Turnaround time: STD
Project Contact: CHELSEA BENNET	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 6716208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: MARK OST	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH+ZN	NHO3	H2SO4	MEOH	Other N/A	TOC 9060	VOC OLM04.3	SVOC OLM04.3	MEE RSK175	AIK/CANS	Sulfides	pH / Sample Info (Lab Use)
	YS08-TB01-111407	11/14/07			2	2							2					
	YS08-GW04-1107	11/14	1100	GW	5	3					2		3	2				
	YS08-GW06-1107		1250	GW	12	6	1		2		3	2	3	2	3	1	1	
	YS08-GW06P-1107		1320	GW	5	3					2		3	2				
	YS08-GW05-1107		1515	GW	5	3					2		3	2				
	YS08-EB01-111407		1600	RI	5	3					2		3	2				
																		68031955
																		1.0/2.6

Lab Use Only		Comments
Sample Unpacked By:	Cyanide samples checked for sulfide & chlorine? Y or NA	
Sample Order Entry By:	625 & Phenol samples checked for chlorine? Y or NA	
Samples Received in Good Condition? Y or N	608 samples checked for pH between 5.0-9.0? Y or NA	
If no, explain:		

Sample Custody

Relinquished by: Carol Peterson	Date/Time: 11/14/07 1715	Received by: Karl Hall	Date/Time: 111507 0915
Relinquished by:	Date/Time:	Received by: KARL I HALL	Date/Time:
Subcontact? Y or N If yes, where?	Custody Seal(s) intact? Y or N	On Ice? Y or N	Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Savannah CTO- 195

GPL LABORATORIES, LLLP

7210A Corporate Court
Frederick, MD 21703
(301) 694-5310
Fax (301) 620-0731

Contract #/Billing Reference: CTO-195

of Pgs.

Project: NWS Yorktown (CTO-195)
Client: CH2M Hill
Send Results To: Chelsea Bennet
Address: 5700 Cleveland St, Suite 101
Virginia Beach, VA 23462
Phone: 757-671-6208

Sample ID#	Date Sampled	Time Sampled	Sample Matrix	Sampler's Initials	VOCs	SVOCs	Alkalinity	VOCs	SVOCs						Lab Cooler No. / CLIENT COMMENTS
Turnaround Time															
# of Containers					3	2	1	1	1						
Container Type					40ml vial	1-L Amber	500ml Poly	2oz jar	4oz jar						
Preservative Used					HCl	—	—	—	—						
Y504-SW03-1207	12/13/07	1200	SW	DL	3	2	1								
Y504-SD02-1207	12/13/07	1210	SD	DL				1	1						
Y508-SW04-1207	12/13/07	1305	SW	DL	3	2	1								680-32771
Y508-SD04-1207	12/13/07	1315	SD	DL				1	1						
Y508-SW03-1207	12/13/07	1410	SW	DL	3	2	1								
Y508-SD03-1207	12/13/07	1420	SD	DL				1	1						TEMP.: 1.2/3.6
Y508-SW02-1207	12/13/07	1455	SW	DL	3	2	1								
Y508-SD02-1207	12/13/07	1505	SD	DL				1	1						
Y508-EB01-121307	12/13/07	1545	EB	DL	3	2									Equipment blank
Y508-TB01-121307	12/13/07		TB	DL	2										Trip blank
Y504-FB01-121307	12/13/07	1530	FB	DL	3	2									Field blank

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	12/13/07 1800	[signature]			

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
		KARL I HALL	12/14/07 0920		

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:
				1.2/3.6

G.P. W.O. _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

* Not a Workshare

CHAIN OF CUSTODY RECORD

Report to:
Company: CHZM VA Beach
Address:
Contact: Chelsea Bennet
Phone:
Fax:
Contract/ Quote:

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name
Sampler's Signature: YORKIT

Proj. No.
Project Name: Yorktown

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	Analysis Requested: SOST	Lab/Sample ID (Lab Use Only)
W	12/13 2007	1455			YS08-SW02-1207					X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	12/14/07	1615			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: Sent to Burlington by mistake

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

[redacted] Savannah CTO - 195

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client: CH2M Hill	Project Manager: Laura Cook	Date: 12/14/07	Chain of Custody Number: 367979
Address: 5700 Cleveland St, Suite 101	Telephone Number (Area Code)/Fax Number: 757-671-6208	Lab Number	Page 1 of 2
City: Virginia Beach; State: VA; Zip Code: 23462	Site Contact: David Livingston; Lab Contact: Chelsea Burnet		
Project Name and Location (State): NWS Yorktown — Remedial Investigation	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.: CTO-195			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): VOCs (4oz. vials)	SVOCs (1L Amber)	Alkalinity (Stock poly)	VOCs (2oz. jar)	SVOCs (4oz. jar)	Special Instructions/ Conditions of Receipt
YSA14-SW05-1207	12/14/07	1030		X									3	2	1			
YSA14-SD05-1207	12/14/07	1040			X											1	1	
YSA14-SW02-1207	12/14/07	1110		X									3	2	1			
YSA14-SD02-1207	12/14/07	1120			X											1	1	
YSA14-SW03-1207	12/14/07	1215		X									3	2	1			
YSA14-SD03-1207	12/14/07	1225			X											1	1	
YBKG-SW02-1207	12/14/07	1245		X									3	2	1			
YBKG-SD02-1207	12/14/07	1255			X											1	1	
YSA14-EB01-~~[illegible]~~ 121407	12/14/07	1400		X									3	2				
YSA14-TB01-121407	12/14/07			X									2					
YSA14-FB01-121407	12/14/07	1140		X									3	2				

TEMP 2.1/2.1/0.3

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

680-32816

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	12/14/07	1700	1. Received By: [signature]	12/15/07	1011
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Page 20 of 28
01/18/2008

Burlington

GPL LABORATORIES, LLLP

7210A Corporate Court
Frederick, MD 21703
(301) 694-5310
Fax (301) 620-0731

Contract #/Billing Reference: CTO-195

of Pgs.

Project: NNS Yorktown (CTO-195)
Client: CH2M Hill
Send Results To: Chelsea Bennet
Address: 5700 Cleveland St, Suite 101
Virginia Beach, VA 23462
Phone: 757-671-6208

Turnaround Time											
# of Containers											
Container Type	1-L Amber	1-L Amber	250mL Poly	250mL Poly	250mL Poly	4oz jar	8oz jar	16oz jar			
Preservative Used	—	—	HNO_3	HNO_3	NaOH		—				
Type of Analysis	Explo, PETN, 35-DNA	Pesticides + PCBs	Total Metals	Dissolved Metals	Cyanide	Explo, PETN, 35DNB, Nitroglycerin, Nitroguanidine	Metals, Cyanide, Pesticides, PCBs	TOC, Grain size, pH, AVS SEM			Lab Cooler No.
Sample ID# / Date Sampled / Time Sampled / Sample Matrix / Sampler's Initials											CLIENT COMMENTS
YS04-SW02-1207 / 12/13/07 / 1200 / SW / DL	2	2	1	1	1						
YS04-SD02-1207 / 12/13/07 / 1210 / SD / DL						1	1	1			
YS08-SW04-1207 / 12/13/07 / 1305 / SW / DL	2	2	1	1	1						
YS08-SD04-1207 / 12/13/07 / 1315 / SD / DL						1	1	1			
YS08-SW03-1207 / 12/13/07 / 1410 / SW / DL	2	2	1	1	1						
YS08-SD03-1207 / 12/13/07 / 1420 / SD / DL						1	1	1			
YS08-SW02-1207 / 12/13/07 / 1455 / SW / DL	2	2	1	1	1						
YS08-SD02-1207 / 12/13/07 / 1505 / SD / DL						1	1	1			
YS08-EB01-121307 / 12/13/07 / 1545 / EB / DL	2	2	1	1	1						
YS04-FB01-121307 / 12/13/07 / 1530 / FB / DL	2	2	1	1	1						

Relinquished By:	Date/Time	Received By:	Relinquished By:	Received for Laboratory By:	Date/Time
[signature]	12/13/07 1800			[signature]	12/14/07 0950

Relinquished By:	Date/Time	Received By:	Date/Time	Shipper:	Airbill No.:
					See attached sheet for tracking numbers

Relinquished By:	Date/Time	Received By:	Lab Comments:	Temp:
			COPY - ORIGINAL ON FILE SDG # YORK17 ETR # 123420	4.5, 3.1, 3.5, 2.3 °C

G.P. W.O. _____

5

[redacted] Burlington CTO-195

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

AL-4142 (0907)

Client: CH2M Hill	Project Manager: Laura Cook	Date:	Chain of Custody Number: 367981
Address: 5700 Cleveland ST, Suite 101	Telephone Number (Area Code)/Fax Number: 757-671-6208	Lab Number:	Page 1 of 2
City: Virginia Beach; State: VA; Zip Code: 23462	Site Contact: David Livingston	Lab Contact: Chelsea Bennet	
Project Name and Location (State): NWS Yorktown - Remedial Investigation	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: CTO-195			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Explo, PETN, 3,5-DNA	Pest + PCBs	Total Metals	Dissolved Metals	Cyanide	Explo, PETN, 3,5-DNA, Nitroglycerin, Nitrocellulose	Metals, Cyanide, Pest, PCBs	TOC, Grain size, pH, AVS SEM					Special Instructions/ Conditions of Receipt
YSA14-SW05-1207	12/14/07	1030		X											2	2	1	1	1								
YSA14-SD05-1207	12/14/07	1040			X															1	1	1					
YSA14-SW02-1207	12/14/07	1110		X											2	2	1	1	1								
YSA14-SD02-1207	12/14/07	1120			X															1	1	1					
YSA14-SW03-1207	12/14/07	1215		X											2	2	1	1	1								
YSA14-SD03-1207	12/14/07	1225			X															1	1	1					
YBK6-SW02-1207	12/14/07	1245		X											2	2	1	1	1								
YBK6-SD02-1207	12/14/07	1255			X															1	1	1					
YSA14-EB01-121407	12/14/07	1400		X											2	2	1	1	1								
YSA14-FB01-121407	12/14/07	1140		X											2	2	1	1	1								

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other_____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By	12/14/07	1700	1. Received By	12/15/07	0905
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

COPY - ORIGINAL ON FILE

SDG # YORK17 ETR # 123418

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

[redacted]

Chain of Custody Record

Burlington

CTO 195

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client	Project Manager	Date	Chain of Custody Number
CH2M Hill	Laura Cook	12/10/07	367936
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
5700 Cleveland St Ste 101	757 671 8311		

City	State	Zip Code	Site Contact	Lab Contact
Virginia Beach	VA	23462	David Livingston	Chelsea Bennet

Project Name and Location (State): NWS Yorktown

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.: CTO 195

Analysis (Attach list if more space needed): Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH		Eagle I PCTN/ SVOC	PESTI PCB	TOTAL METALS	Dissolved Metals	Cyanide	Grain Analysis	MCL CN Pest PCB							Special Instructions/ Conditions of Receipt
YS22-SW03-1207	12/10/07	1000		X											2	2	1	1	1									
YS22-SD03-1207	12/10/07	1010			X															1	1							
YSA14-SW01-1207	12/10/07	1145		X											2	2	1	1	1									
YSA14-SD01-1207	12/10/07	1155			X															1	1							
YSA14-EB01-121007	12/10/07	1230		X											2	2	1	1	1									Equipment Blank
YBG-SW01-1207	12/10/07	1500		X											2	2	1	1	1									
YBG-SD01-1207	12/10/07	1510			X															1	1							
YBG-SW01P-1207	12/10/07	1505		X											2	2	1	1	1									
YBG-SD01P-1207	12/10/07	1515			X															1	1							
																												* 3 coolers

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [ ] Return To Client [ ] Disposal By Lab [ ] Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: [ ] 24 Hours [ ] 48 Hours [ ] 7 Days [ ] 14 Days [ ] 21 Days [ ] Other Per Contract

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
[signature]	12/10/07	1800	Jack L Austin	12/11/07	0925
2. Relinquished By	**Date**	**Time**	**2. Received By**	**Date**	**Time**
3. Relinquished By	**Date**	**Time**	**3. Received By**	**Date**	**Time**
			COPY - ORIGINAL ON FILE		

Comments

SDG # ~~123~~ 12/11/07 ETR # 123348

YORK15

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

CompuChem
a division of Liberty Analytical Corp.

BURLINGTON
2 coolers

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

CTO 195

Page 1 of 1

Courier: FedEx
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 CLEVELAND St #101
City: VA BCH State: VA Zip: 23462
Project Contact: CHELSEA BENNET
Phone #: (757) 671 6208
Sampler's Name: MARK OST

Project Information

Project Name: YORKTOWN NWS CTO 195
Sampling Location:
Turnaround time: STD
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
see * for GW01A
Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other N/A	EXPLO/PETN/35DNA/NITROGLYC	NITROGUANADINE	TOTAL METALS ILM05.3	FILTERED MTLS ILM05.3	CYANIDE	PCB OLM04.3	pH / Sample Info (Lab Use)
	YSA14-FB01-111207	11/12/07	1200	O			1	2			4	2	2	1	1	1		
	YSA14-GW04-1107		1230	GW			1	2			4	2	2	1	1	1		
	YS08-GW01A-1107		1530	GW			1	2			6	2	2	1	*	1	2	

equip. failure sending sample w/ no filtered metals for GW01A

Lab Use Only

Sample Unpacked By: Jason L Robertson
Sample Order Entry By: Jason L Robertson
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: Carol Peterson	Date/Time: 11/12/07	Received by: Jason L Robertson	Date/Time: 11/13/07 0925
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 2.5, 2.7 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CompuChem
a division of Liberty Analytical Corp.

BURLINGTON
4 coolers

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 1 of 1

Courier: Fed Ex
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: YORKTOWN NWOS
Address: 5700 CLEVELAND ST #101	Sampling Location: SITE 8
City: VA BCH State: VA Zip: 23462	Turnaround time: STD
Project Contact: CHELSEA BENNET	Batch QC or Project Specific? If Specific, which Sample ID?: YS08-GW01-1107
Phone #: 757 671 6208	Are aqueous samples field filtered for metals? Y or N: Y
Sampler's Name: MARK OST	Are high concentrations expected? Y or N? If yes, which ID(s)?: ?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other N/A	Pest/PCB	Expl/RETN/35DNA/Nitro Sky/Glycerin	Nitroguanidine	Total Metals 1wnos.3	Filtered Metals 1wnos.3	Cyanide					pH / Sample Info (Lab Use)
	YS08-GW01-1107	11/13/07	1315	GW	27		3	6			18	6	6	6	3	3	3		Run DAQC			
	YS08-GW03-1107		1510	GW	9		1	2			6	2	2	2	1	1	1					
	YS08-EB01-111307		1600	RI	9		1	2			6	2	2	2	1	1	1					

Lab Use Only

Sample Unpacked By: Joan L Dalton
Sample Order Entry By: Joan L Dalton
Samples Received in Good Condition? Y or N: Y
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: Carl Petterson	Date/Time: 11/13/07 1800	Received by: Joan L Dalton	Date/Time: 11/14/07 0925
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N: Y
On Ice? Y or N: Y
Cooler Temp: 2.5, 3.0, 2.1, 2.0 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CompuChem BURLINGTON
a division of Liberty Analytical Corp.
+coolers

CHAIN OF CUSTODY

CJ8155

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 1 of 1

Courier: Fed Ex
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: YORKTOWN NWS
Address: 5700 CLEVELAND ST #101	Sampling Location: Site 8
City: VA BCH State: VA Zip: 23462	Turnaround time: Std
Project Contact: CHELSEA BENNET	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: Mark Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	NHO3	H2SO4	MEOH	Other N/A	Pest/PCB 8082	Expl/PETN/3,5 DNA/Nitro. Glycerin 8330	Nitroguanidine	Total Metals 6010/7470	Filtered Mtls 6010/7470	Cyanide					pH / Sample Info (Lab Use)
	YS08-GW04-1107	11/14/07	1100	GW	9		1	2			6	2	2	2	1	1	1					
	YS08-GW06-1107		1250	GW	9		1	2			6	2	2	2	1	1	1					
	YS08-GW06P-1107		1320	GW	9		1	2			6	2	2	2	1	1	1					
	YS08-GW05-1107		1515	GW	9		1	2			6	2	2	2	1	1	1					
	YS08-~~GW~~ EB01-111407		1600	RI	9		1	2			6	2	2	2	1	1	1					

Lab Use Only

Sample Unpacked By: Joan L Atkins
Sample Order Entry By: Joan L Atkins
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: Carol Peterson	Date/Time: 11/14/07 1715	Received by: Joan L Atkins	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 3.4, 2.7, 2.4, 2.3 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Chain of Custody Record

Burlington

CTO 195

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client	Project Manager	Date	Chain of Custody Number
CH2M Hill	Laura Cook	12/10/07	367936
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
5700 Cleveland St STE 101	757 671 8311		

City	State	Zip Code	Site Contact	Lab Contact
Virginia Beach	VA	23462	David Livingston	Chelsea Burnet

Project Name and Location (State): NWS Yorktown

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.: CTO 195

Analyses (Attach list if more space needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Eagle 1 PCTN Aroclor 5,4,1016	Pest / PCB	Total Metals	Dissolved Metals	Cyanide	Gasoline Avgsolvent TPH	Mtl Gal Pest PCB						Special Instructions/ Conditions of Receipt
YS22-SW03-1207	12/10/07	1000		X									2	2	1	1	1								
YS22-SD03-1207	12/10/07	1010			X													1	1						
YSA14-SW01-1207	12/10/07	1145		X									2	2	1	1	1								
YSA14-SD01-1207	12/10/07	1155			X													1	1						
YSA14-EB01-121007	12/10/07	1230		X									2	2	1	1	1								Equipment Blank
YBG-SW01-1207	12/10/07	1500		X									2	2	1	1	1								
YBG-SD01-1207	12/10/07	1510			X													1	1						
YBG-SW01P-1207	12/10/07	1505		X									2	2	1	1	1								
YBG-SD01P-1207	12/10/07	1515			X													1	1						
																									* 3 coolers

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other Per Contract

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	12/10/07	1800	1. Received By: Jack L Austin	12/11/07	0925
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

CTO-195

Burlington

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

CHAIN OF CUSTODY RECORD

Report to:
Company: CH2M Hill
Address: 5700 Cleveland ST STE 101
Contact: Chelsea Bennett
Phone: 757 671 8311
Fax:
Contract/ Quote: CTO-195

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Lab Use Only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Custody Seal N / Y
Intact N / Y
Screened For Radioactivity ☐

Sampler's Name: ML DST
Sampler's Signature:

Proj. No.: CTO195
Project Name: NWS Yorktown

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	Explosives	Pesticides	Total Metals	Dissolved Metals	Cyanide	Trace Analysis	Metal Cat Test	Explosives						Lab/Sample ID (Lab Use Only)
										35 ml	1 L	250 ml	250 ml	250 ml	250 ml	250 ml	1 L						
W	12/11 07	1020		X	YBG-SW04-1207		4	3		2	2	1	1	1	+	+							
SED	12/11 07	1030		X	YBG-SD04-1207				3						1	1	1						
W	12/11 07	1120		X	YBG-SW05-1207		4	3		2	2	1	1	1									
SED	12/11 07	1130		X	YBG-SD05-1207				3						1	1	1						
W	12/11 07	1345		X	YS08-SW01-1207		12	9		6	6	3	3	3									Run QC
SED	12/11 07	1355		X	YS08-SD01-1207				9						3	3	3						Run QC
W	12/11 07	1515		X	YS08-EB01-121107		4	3		2	2	1	1	1									Equipment Blank

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Remarks
	12/11/07	1830				
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date 12-12-7	Time 1000	Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix WW - Wastewater W - Water S - Soil L - Liquid A - Air bag C - Charcoal Tube SL - Sludge O - Oil
[2]Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other Glass

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

Chain of Custody Record

CTO 195

SAVANNAH

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4142 (0907)

Client	Project Manager	Date	Chain of Custody Number
CH2M Hill	Laura Cook	12/10/07	367935

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
5700 Cleveland St Ste 101	757-671-8371		

City	State	Zip Code	Site Contact	Lab Contact
Virginia Beach	VA	23462	David Livingston	Chelsea Bennet

Project Name and Location (State)	Carrier/Waybill Number
NWS Yorktown	

Contract/Purchase Order/Quote No: CTO 195

Analysis (Attach list if more space is needed): VOC 8260B; SVOC 1L; AIK 310.2; VOC 200.7; SVOC 524.2 407; GRO to Ad 8015; DRO 8015

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	VOC 8260	SVOC 1L	AIK 310.2	VOC 200.7	SVOC 524.2 407	GRO to Ad 8015	DRO 8015	Special Instructions/ Conditions of Receipt
YS22-SW03-1207	12/10/07	1000		X						X			3	2	1					
YS22-SD03-1207	12/10/07	1010			X											1	2	D	D	
YSA14-SW01-1207	12/10/07	1145		X									3	2	1					
YSA14-SD01-1207	12/10/07	1155			X											1	2			
YSA14-EB01-121007	12/10/07	1236		X									3	2						Equipment Blank
YSA14-TB01-121007	12/10/07	—		X									2							Trip Blank
YBG-SW01-1207	12/10/07	1500		X									3	2	1					
YBG-SD01-1207	12/10/07	1516			X											1	2			
YBG-SW01P-1207	12/10/07	1565		X									3	2						680-32610
YBG-SD01P-1207	12/10/07	1515			X											1	2			
																				* 2 coolers

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [ ] Return To Client [ ] Disposal By Lab [ ] Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: [ ] 24 Hours [ ] 48 Hours [ ] 7 Days [ ] 14 Days [ ] 21 Days [X] Other Per Contract

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	12/10/07	1800	1. Received By	12/11/07	0929
2. Relinquished By			2. Received By KARL ITALL		
3. Relinquished By			3. Received By		

Comments

TEMPERATURE 1.0/2.9/1.1/1.0

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

CTO - 195

Savannah

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403 Tel: 802 660 1990

CHAIN OF CUSTODY RECORD

Report to:
Company: CH2M Hill
Address: 5700 Cleveland St, Suite 101
Virginia Beach, VA 23462
Contact: Chelsea Bennet
Phone: 757-671-6208
Fax:
Contract/Quote: CTO - 195

Invoice to:
Company:
Address:
Contact:
Phone:
Fax:

Lab Use Only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Sampler's Name: David Livingston
Sampler's Signature:

Proj. No.:
Project Name: NWS Yorktown

ANALYSIS REQUESTED: VOC (40 ml vial); SVOC (1-L Amber); Alkalinity (500 ml Poly); VOC (2 oz jar); SVOC (4 oz jar)

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No/Type of Containers[2]: VOA	A/G 1 Lt.	250 ml	P/O	VOC (40 ml vial)	SVOC (1-L Amber)	Alkalinity (500 ml Poly)	VOC (2 oz jar)	SVOC (4 oz jar)	Lab/Sample ID (Lab Use Only)
SW	12/11/07	1020		X	YBG-SW04-1207	3	2		1	3	2	1			
SD	12/11/07	1030		X	YBG-SD04-1207				2				1	1	
SW	12/11/07	1120		X	YBG-SW05-1207	3	2		1	3	2	1			
SD	12/11/07	1130		X	YBG-SD05-1207				2				1	1	680-32635
SW	12/11/07	1345		X	YS08-SW01-1207	9	6		3	9	6	3			
SD	12/11/07	1355		X	YS08-SD01-1207				6				3	3	
EB	12/11/07	1575		X	YS08-EB01-121107	2	2			2	2				Equipment blank
TB	12/11/07				YBG-TB01-121107	2				2					Trip blank

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	12/11/07	1830			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			FARL I HALL	121207	0923
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Remarks: MS/MSD collected for YS08-SW01-1207 and YS08-SD01-1207

Client's delivery of samples constitutes acceptance of TestAmerica terms and conditions contained in the Price Schedule.

[1]Matrix: WW - Wastewater; W - Water; S - Soil; L - Liquid; A - Air bag; C - Charcoal Tube; SL - Sludge; O - Oil
[2]Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

TestAmerica Cannot accept verbal changes. Please Fax written changes to (802) 660-1919

TAL-8234(1007)

Appendix E
Microbial Results

2340 Stock Creek Blvd.
Rockford TN 37853-3044
Phone: (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

DNA Analysis Report

Client: Chelsea Bennett
CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, VA 23462

Phone: (757) 671-6208

Fax: (757) 497-6885

MI Identifier: 027EK **Date Rec:** 11/14/2007 **Report Date:** 11/19/2007

Client Project #: **Client Project Name:** YORKTOWN NWS

Purchase Order #:

Analysis Requested: CENSUS

Comments:

All samples within this data package were analyzed under U.S. EPA Good Laboratory Practice Standards: Toxic Substances Control Act (40 CFR part 790). All samples were processed according to standard operating procedures. Test results submitted in this data package meet the quality assurance requirements established by Microbial Insights, Inc.

Reported By: Anita Biernacki

Reviewed By: Dora M Ogles

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

Q Potential (DNA)

Client: **CH2M HILL**
Project: YORKTOWN NWS

MI Project Number: **027EK**
Date Received: 11/14/2007

Sample Information

Client Sample ID:	**YS08-GW01-1107**	**YS08-GW06-1107**
Sample Date:	11/13/2007	11/14/2007
Units:	cells/mL	cells/mL

Dechlorinating Bacteria

Dehalococcoides spp (1)	DHC	**1.09E+00**	**1.26E+00**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Notes:
1 Bio-Dechlor Census technology was developed by Dr. Loeffler and colleagues at Georgia Institute of Technology and was licensed for use through Regenesis.

CompuChem MICROBIAL INSIGHTS
a division of Liberty Analytical Corp.

CHAIN OF CUSTODY

(1 cooler)

501 Madison Ave
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 1 of 1

Courier: FedEx
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: YORKTOWN NWS
Address: 5700 CLEVELAND St #101	Sampling Location: SITE 8
City: VA BEACH State: VA Zip: 23462	Turnaround time: STD
Project Contact: CHELSEA BENNET	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671 6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: MARK CST	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analyses (include method and bottle type): Dehalococcoides

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	Dehalococcoides	pH / Sample Info (Lab Use)
027EKI	YS08-GW01-1107	11/13/07	1315	GW	1							1	

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: [signature]	Date/Time: 11/13/07 1800	Received by: [signature]	Date/Time: 11-14-07 10:00
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On ice? Y or N
Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CompuChem
a division of Liberty Analytical Corp.

MICROBIAL
IN8104

CHAIN OF CUSTODY

501 Madison Ave
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

1 cooler

Courier
Airbill
Sampli

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: YORKTOWN NWS
Address: 5700 CLEVELAND St #101	Sampling Location: Site 8
City: VABCH State: VA Zip: 23462	Turnaround time: Std
Project Contact: CHELSEA BENNET	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-6200	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: Mark Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include meth

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	Dehalococcoides					
027EK2	YS08-GW06-1107	11/14/07	1250	GW	1							1					

Lab Use Only

Sample Unpacked By:	Cyanide samples checked for sulfide & chlorine? Y or NA
Sample Order Entry By:	625 & Phenol samples checked for chlorine? Y or NA
Samples Received in Good Condition? Y or N	608 samples checked for pH between 5.0-9.0? Y or NA
If no, explain:	

Sample Custody

Relinquished by: [signature]	Date/Time: 11/14/07 1715	Received by:
Relinquished by:	Date/Time:	Received by:
Subcontact? Y or N If yes, where?	Custody Seal(s) intact? Y or N	On Ice? Y or N

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy

2340 Stock Creek Blvd.
Rockford TN 37853-3044
Phone: (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

DNA Analysis Report

Client: Chelsea Bennett
CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, VA 23462

Phone: (757) 671-6208

Fax: (757) 497-6885

MI Identifier: 017EK **Date Rec:** 11/09/2007 **Report Date:** 11/12/2007

Client Project #: 362248 **Client Project Name:** Remedial Investigation for SSA14

Purchase Order #: 924229

Analysis Requested: CENSUS

Comments:

All samples within this data package were analyzed under U.S. EPA Good Laboratory Practice Standards: Toxic Substances Control Act (40 CFR part 790). All samples were processed according to standard operating procedures. Test results submitted in this data package meet the quality assurance requirements established by Microbial Insights, Inc.

Reported By:

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

Q Potential (DNA)

Client: **CH2M HILL**
Project: Remedial Investigation for SSA14

MI Project Number: **017EK**
Date Received: 11/09/2007

Sample Information

Client Sample ID:		**YSA14-GW05-1107**	**YSA14-GW05A-1107**	**YS04-GW05-1107**
Sample Date:		11/08/2007	11/08/2007	11/08/2007
Units:		cells/mL	cells/mL	cells/mL

Dechlorinating Bacteria

Dehalococcoides spp (1)	DHC	<4.98E-01	<5.07E-01	**9.83E-01**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Notes:
1 Bio-Dechlor Census technology was developed by Dr. Loeffler and colleagues at Georgia Institute of Technology and was licensed for use through Regenesis.

CTO - 195

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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page ____ of ____

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: Remedial Investigation for SSA 14
Address: 5700 Cleveland St, Suite 101	Sampling Location: NWS Yorktown - SSA 14
City: Virginia Beach, State: VA, Zip: 23462	Turnaround time: R
Project Contact: Chelsea Burnett	Batch QC or ~~Project Specific~~? If Specific, which Sample ID? C
Phone #: 757-671-6208	Are aqueous samples field filtered ~~for metals~~? Y or N
Sampler's Name: David Livingston	Are high concentrations expected? Y or N? If yes, which ID?

Requested Analyses (include method and bottle type): Dehalococoides

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

pH / Sample Info (Lab Use)

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MeOH	Other	Dehalococoides
DITEK 1	YSA14-GW05-1107	11/5/07	1015	GW								1
2	YSA14-GW05A-1107	11/5/07	1200	GW								1

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by:	Date/Time: 11/5/07 1730	Received by:	Date/Time: 11-9-07 9:30
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where? | Custody Seal(s) intact? Y or N | On Ice? Y or N | Cooler Temp: °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

SHIP TO: MICROBIAL INSIGHTS attn: Greg Davis

SEVERN TRENT **STL**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Import Lab STL Savannah
Address & Phone **5102 LaRoche Ave., Savannah, GA 31404, 912-354-7858**

PROJECT REFERENCE: LeJeune	PROJECT NO	PROJECT LOCATION
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO
CLIENT (SITE) PM: Chelsea Bennet	CLIENT PHONE	CLIENT FAX
CLIENT NAME: CH2M Hill	CLIENT EMAIL: chelsea.bennett@ch2m.com	
CLIENT ADDRESS		
COMPANY PORTION HAVING THIS WORK IF APPROPRIATE		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ● DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE

NUMBER OF COOLERS SUBMITTED (FOR SHIPMENT)

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	DEHALOCOCCOIDES												REMARKS
								NUMBER OF CONTAINERS SUBMITTED												
11/7/2007		YSO04-GW05-1107 *		X				1		07EK3										LITER UNPRESERVED IS PROVIDED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	11/8/07	1635						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:

* Sample received at The Savannah on 11/08/07 in error - Sent to Microbial Insights per Chelsea Bennett. No original COC received. [signature]

Appendix F
MIP Study Results

SmartData Solutions®

Subsurface Characterization Using Membrane Interface Probe (MIP) and Soil Conductivity (SC) Technologies at the Naval Weapons Station - Site 14 Yorktown, Virginia

PREPARED FOR

CH2M Hill
135 South 84th St Suite 101
Milwaukee, Wisconsin 53214

April 17, 2007

PREPARED BY

COLUMBIA Technologies, LLC
1448 South Rolling Rd.
Baltimore, Maryland 21227
410-536-9911
www.columbiatechnologies.com

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Figure 3 .....Oblique View Relative Azimuth 195°, ECD Response >3.5E+05Uv, Conductivity Response > 30 mS/M

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Figure 6 .....Transect View Relative Azimuth 90°, ECD Response >3.5E+05Uv, Conductivity Response > 30 mS/M

Figure 7 .....Transect View Relative Azimuth 0°, ECD Response >3.5E+05Uv, Conductivity Response > 30 mS/M

APPENDIX

Appendix A: MIP Logs (Best Fit Scale)

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Introduction

CH2M Hill contracted **COLUMBIA Technologies, LLC (COLUMBIA)** to conduct an investigation of subsurface contamination at the Naval Weapons Station - Site 14 site, located in Yorktown, Virginia. This investigation involved delineating the depth and horizontal extent of contamination using Membrane Interface Probe (MIP) and Soil Conductivity (SC) technologies. The purpose of this investigation was to characterize subsurface soils in the vadose and saturated zones, and delineate the nature and extent of soil and groundwater contamination.

The investigation was conducted March 7, 2007 through April 16, 2007 by COLUMBIA.

Objectives

The objectives of the MIP/SC investigation were to:

1. Characterize subsurface soils in the vadose and saturated zones.
2. Delineate the lateral boundaries of the contaminant in soil and groundwater.
3. Delineate the vertical extent of contamination in soil and groundwater.

Equipment Description

The MIP/SC probe is approximately 12-inches (30 cm) in length and 1.5-inches (3.8 cm) in diameter. The probe is driven into the ground at the nominal rate of one foot per minute using a Geoprobe® or similar direct push rig.

Soil conductivity, the inverse of soil resistivity, is measured using a dipole arrangement. In this process, an alternating electrical current is transmitted through the soil from the center, isolated pin of the probe. This current is then passed back to the probe body. The voltage response of the imposed current to the soil is measured across these same two points. Conductivity is measured in Siemens/meter, and due to the low conductivity of earth materials, the SC probe uses milliSiemens/meter (mS/m). The probe is reasonably accurate in the range of 5 to 400 mS/m. In general, at a given location, lower conductivity values are generally characteristic of larger particles such as sands, while higher conductivities are characteristic of finer sized particles such as silts and clays.

The MIP portion of the probe was developed and patented by Geoprobe Systems, Inc. The operating principle is based on heating the soil and/or water around a semi-permeable polymer membrane to 121ºC, which allows volatile organic compounds (VOCs) to partition

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across this membrane. The MIP can be used in saturated or unsaturated soils, as water does not pass through the membrane. Nitrogen is used as a carrier gas, and travels from a surface supply down a transfer tubing which sweeps across the back of the membrane and returns any captured VOCs to the installed detectors at the surface. It takes approximately 37 seconds for the nitrogen gas stream to travel through 100 feet of inert tubing and reach the detectors.

COLUMBIA utilizes three detectors: a Photo Ionization Detector (PID), a Flame Ionization Detector (FID) and an Electron Capture Detector (ECD), mounted on a laboratory grade Shimadzu Model 14A gas chromatograph. The output signal from the detectors is captured by a MIP data logging system installed on a MIP Field Computer or laptop computer. Conductivity, speed, detector data and temperature are displayed continuously in real time during each push of the probe. In addition, the data logs can be printed for display and analysis following the data logging run or exported to common spreadsheet software for further analysis using COLUMBIA's ***SmartData Solutions***[tm] technology.

The PID detector consists of a special UV lamp mounted on a thermostatically controlled, low volume, flow-through cell. The temperature is adjustable from ambient temperature to 250ºC. The 10.2 electron volt (eV) UV lamp emits energy at a wavelength of 120 nanometers, which is sufficient to ionize most aromatics (benzene, toluene, xylene, etc.) and many other molecules (e.g. H_2S, hexane, ethanol) whose ionization potential is below 10.2 eV. The PID also emits a lower response for chlorinated compounds such as TCE and PCE. Methanol and water, which have ionization potentials greater than 10.2 eV, do not respond on the PID. Detection limits for aromatics are in the low picogram range at the detector. Since the PID is non-destructive, it is often run first in series with other detectors for multiple analyses from a single injection. Use of the PID is mandated in several EPA methods (8021, TO-14 etc.) because of its sensitivity and selectivity.

The most commonly used GC detector is the FID, which responds linearly over several orders of magnitude from its minimum detectable quantity of about 100 picograms. The FID response is very stable from day to day, and is not susceptible to contamination from dirty samples or column bleed. This detector responds to any molecule with a carbon-hydrogen bond, but poorly to compounds such as H_2S, CCl_4, or NH_3. The carrier gas effluent from the GC column is mixed with hydrogen and burned. Hydrogen supports a flame and ionizes the analyte molecules. A collector electrode attracts the negative ions to the electrometer amplifier, producing an analog signal, which is directed to the data system input.

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The ECD detector consists of a sealed stainless steel cylinder containing radioactive Nickel-63. The Nickel-63 emits beta particles (electrons), which collide with the carrier gas molecules, ionizing them in the process. This forms a stable cloud of free electrons in the ECD cell. When electro-negative compounds (especially chlorinated, fluorinated or brominated molecules) such as carbon tetrachloride or TCE enter the cell, they immediately combine with the free electrons, temporarily reducing the number remaining in the electron cloud. The detector electronics, which maintain a constant current of about 1 nanoampere through the electron cloud, are forced to pulse at a faster rate to compensate for the decreased number of free electrons. The pulse rate is converted to an analog output, which is transmitted to the data system.

System Performance Testing

Prior to logging each MIP location, performance tests with specific compounds are conducted to evaluate the sensitivity of the particular probe, transfer line and detector suite to be used. An aqueous phase test is performed prior to each location using neat benzene and neat TCE. The resulting values are recorded and compared to predetermined values.

Investigation Methods

MIP/SC profiling was conducted at 10 locations total on, or adjacent to the property of the Naval Weapons Station - Site 14, selected by CH2M Hill's representative onsite. Drilling was completed using a Geoprobe® rig, and termination of MIP logging was determined by CH2M Hill's representative onsite. The results from each location are shown in Appendix A. Maps and 3D graphics of the site have been prepared for easier visualization of the subsurface.

MIP Log Interpretation

Each MIP log includes six separate graphs of data. The first graph is conductivity and is measured in millisiemens per Meter (mS/M). In general, lower conductivities are indicative of coarser grained particles, such as sands, and higher conductivities are characteristic of finer grained particles, such as silts and clays. The second graph is the rate of penetration (speed of the probe) and is measured in feet/min. This information can be used to determine how resistant the subsurface is to the direct push and/or percussion. The next three graphs are measures of

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chemical detector response: PID, FID, and ECD, measured in microvolts (uV). These graphs are a linear scale, and give relative concentrations of contamination. The last graph displays the temperature of the probe as it is advanced in the subsurface. This graph can sometimes be useful to determine where groundwater is encountered.

Correlating MIP Results to Sampling & Laboratory Analyses

It is important to note that some variation between MIP results and quantitative laboratory analyses of selected soil or groundwater samples can be expected. The MIP process uses a membrane extraction process from a heated zone of varying subsurface matrix of soil, water, and/or vapor. Soil and groundwater results involve the collection of a sample, extraction of sub-sample at the surface, and then transporting them to a laboratory for further extraction and analysis. These two processes are different by definition. The difference is further accentuated by any difference in depth from where the respective samples are taken for the two different processes and the type of matrix that is sampled.

MIP results are not quantitative results, i.e. concentration values. Contaminant concentration is a ratio of contaminant mass to a particular matrix volume. The mass of a compound that passes through the membrane for evaluation by the MIP detector system will vary as a result of several factors including the volume and type of matrix from which the mass is extracted. Therefore, an accurate calculation of mass is preempted.

When the MIP system lineup and operating protocol are standardized between data points, then the MIP results are an accurate representation of the relative variation of contaminant mass detected with changes in depth. The variation in this case will be wholly dependent on the subsurface conditions, not the internal MIP system performance. This leads to an accurate estimation of the plume boundaries and the geometric volume of soils that it occupies. Follow on soil and groundwater confirmation samples co-located with MIP boring locations taken on hundreds of contaminated sites investigated by Columbia Technologies confirm a high overall correlation between MIP results and quantitative lab results.

SmartData Solutions®

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COLUMBIA's SmartData Solutions® is a patented process (U.S. Patent No, 7,058,509) that enables the rapid processing of field data into easy to understand 3D visualizations posted to a password protected website. This process includes quality assurance, formatting and rapid visualization of the data for the project team and enables a complete check of the dataset prior to completion of fieldwork.

Delineation and Volume

The SmartData Solutions® graphics display a 3-dimensional view of the contamination plume. These plumes are calculated by extrapolating data in three dimensions between measured data points. The plume is calculated only within the bounds of the outermost measured points. A plume is considered to be unbounded when it extends to the bounds of those outermost measured points. A fully bounded plume will exist entirely within the confines of the outermost measured points.

The SmartData Solutions® graphics also display a plume volume calculation in the heading. This volume is based on the minimum response level listed in the heading. Volume is calculated by using the scale of the map provided. As a result, the plume calculation is only as accurate as the scale and details of the map. It is important to note that the plume volume calculation reflects only the portion of the plume that exists within the outermost measured points. The volume reported of an unbounded plume may be greatly understated. In any case, the volumes reported are intended for general planning purposes only and may vary from actual volumes.

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3-Dimensional Orientation

The SmartData Solutions® graphics use a relative azimuth system to describe map orientation because many maps are not oriented with true North at the top of the map. The relative azimuth system uses a 360° compass to describe the position *from which* the graphic is being viewed. For example, a viewer "looking east" on a North oriented map would have a relative azimuth of 270°., i.e. the viewer would be standing on the "western" 270° azimuth point looking through the center to the "east".

The header also describes elevation. Elevation is the number of degrees that the graphic is rotated on the vertical Z axis. A plan view has an elevation of 90°; a transect view has an elevation of 0°.

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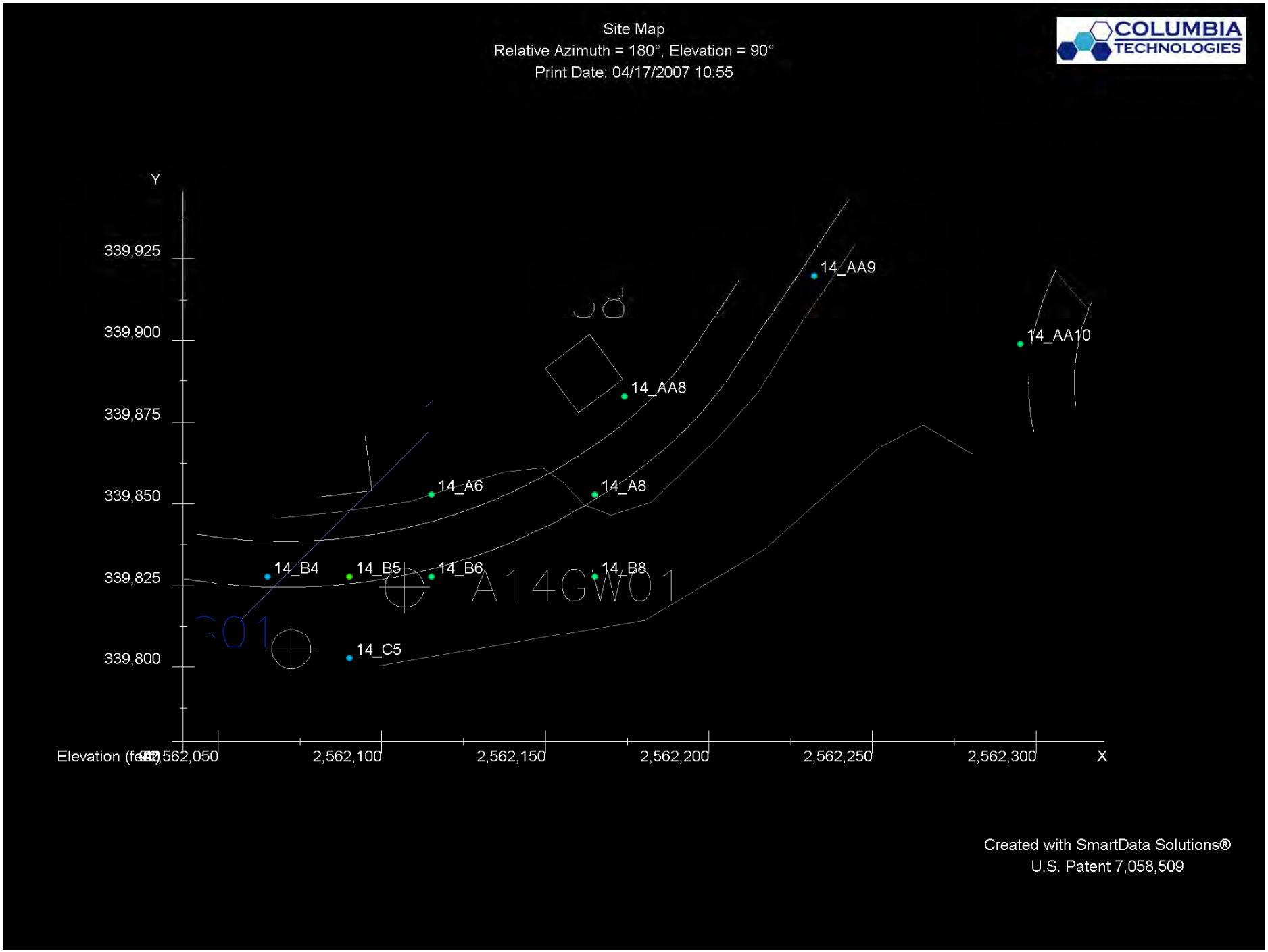

Figure 1 Sitemap and MIP Locations
March 7, 2007 – April 16, 2007

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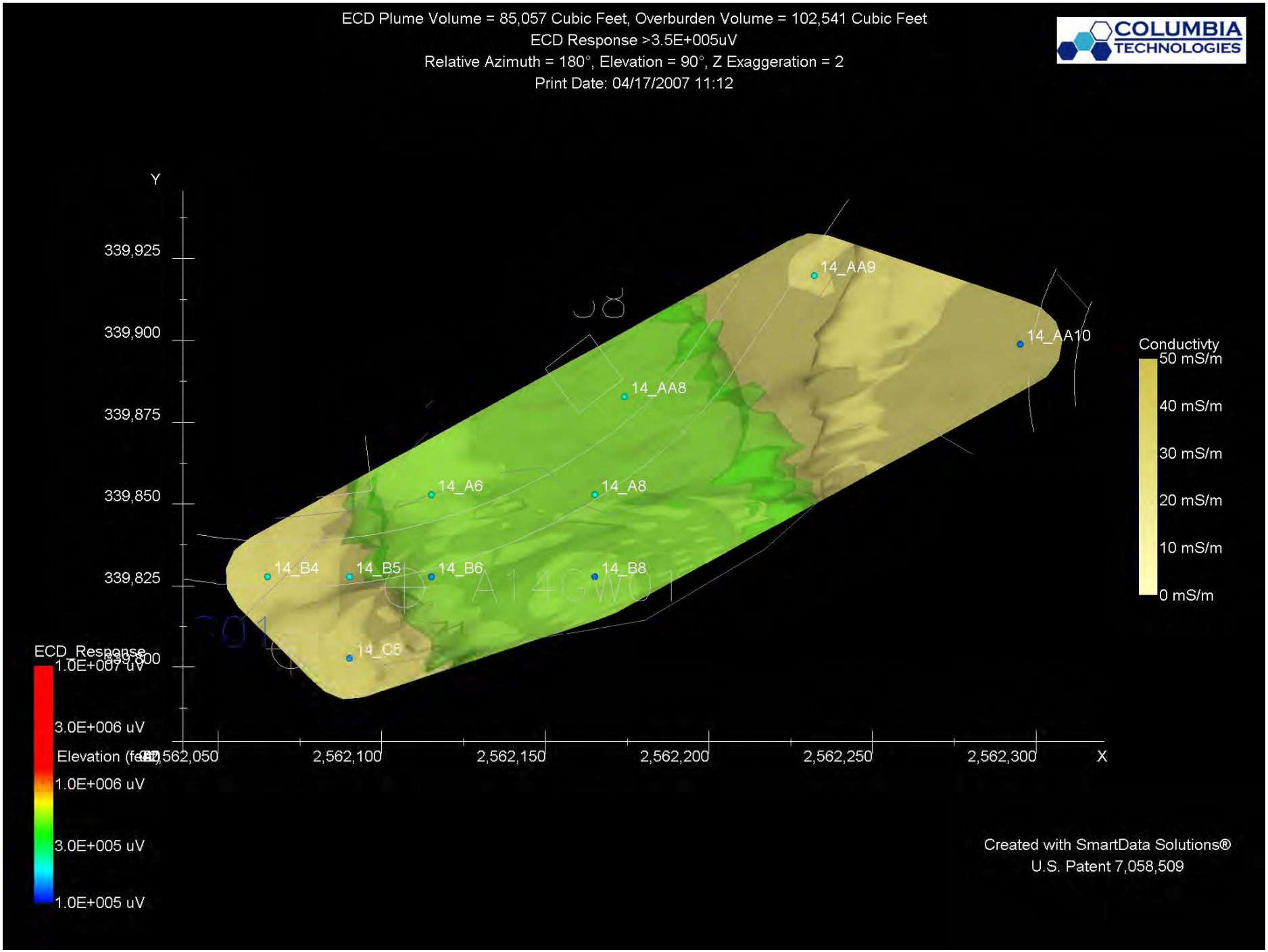

Figure 2 Plan View Relative Azimuth 180°
March 7, 2007 – April 16, 2007

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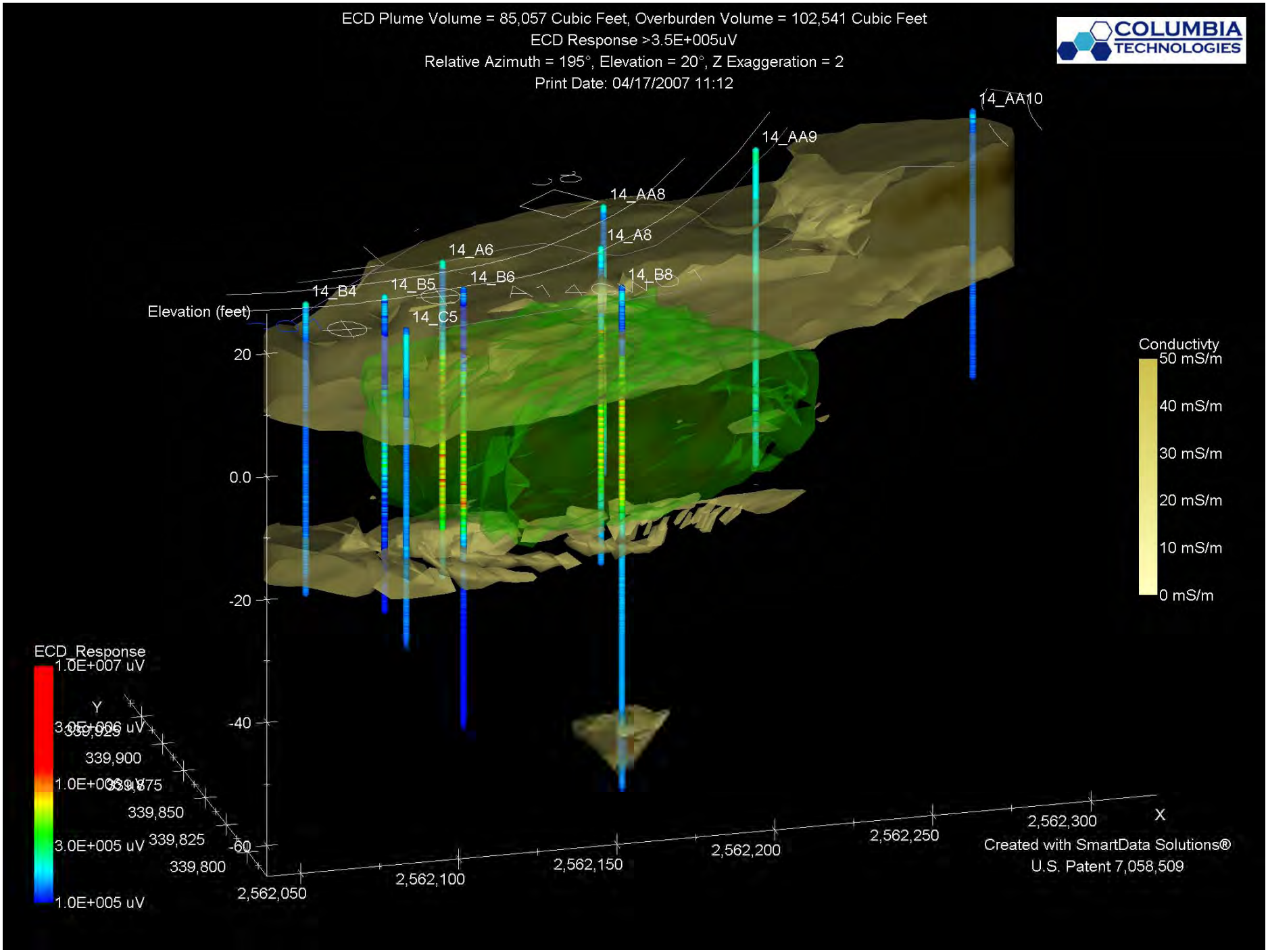

Figure 3 Oblique View Relative Azimuth 195°
March 7, 2007 – April 16, 2007

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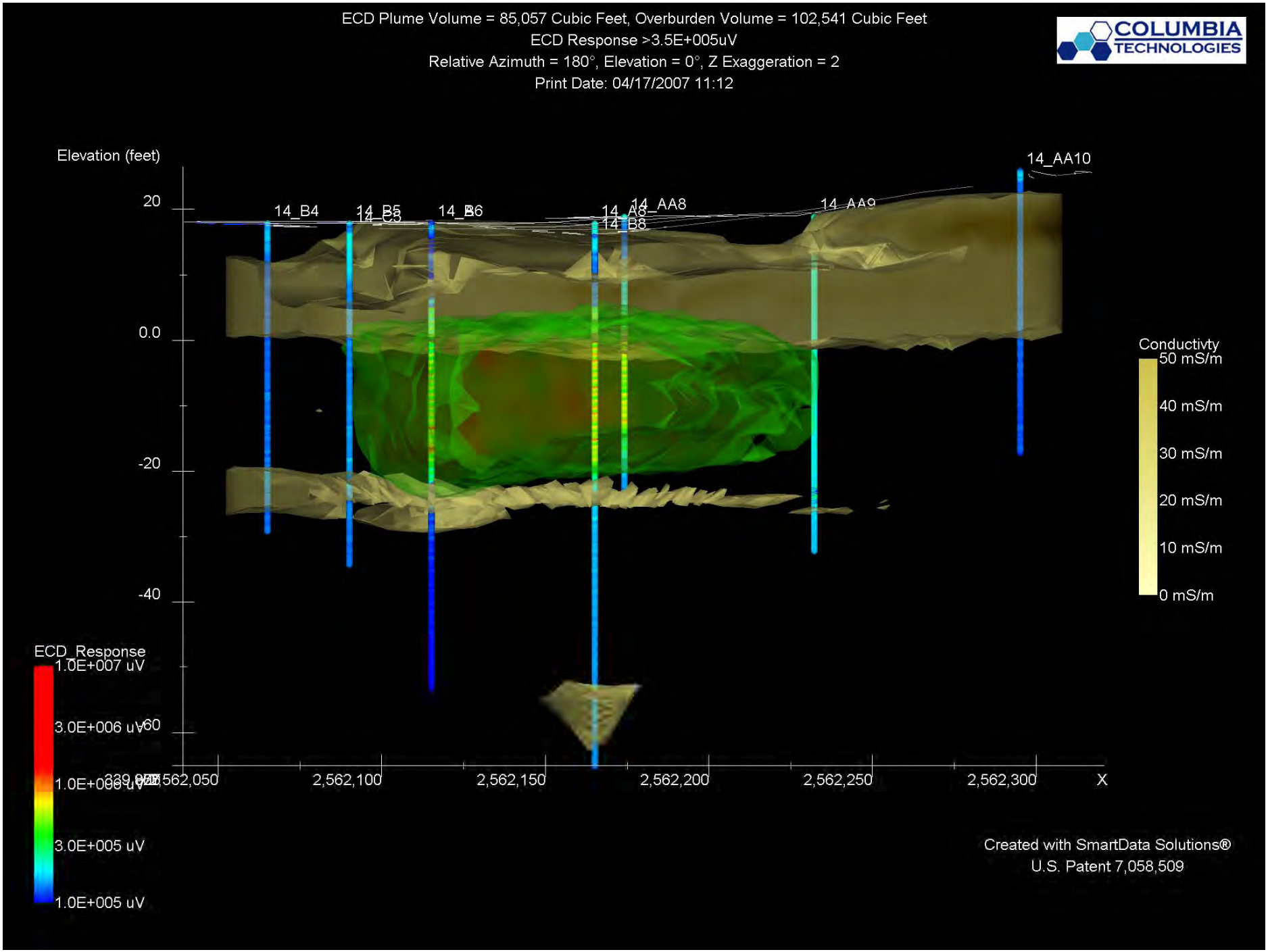

Figure 4 Transect View Relative Azimuth 180°
March 7, 2007 – April 16, 2007

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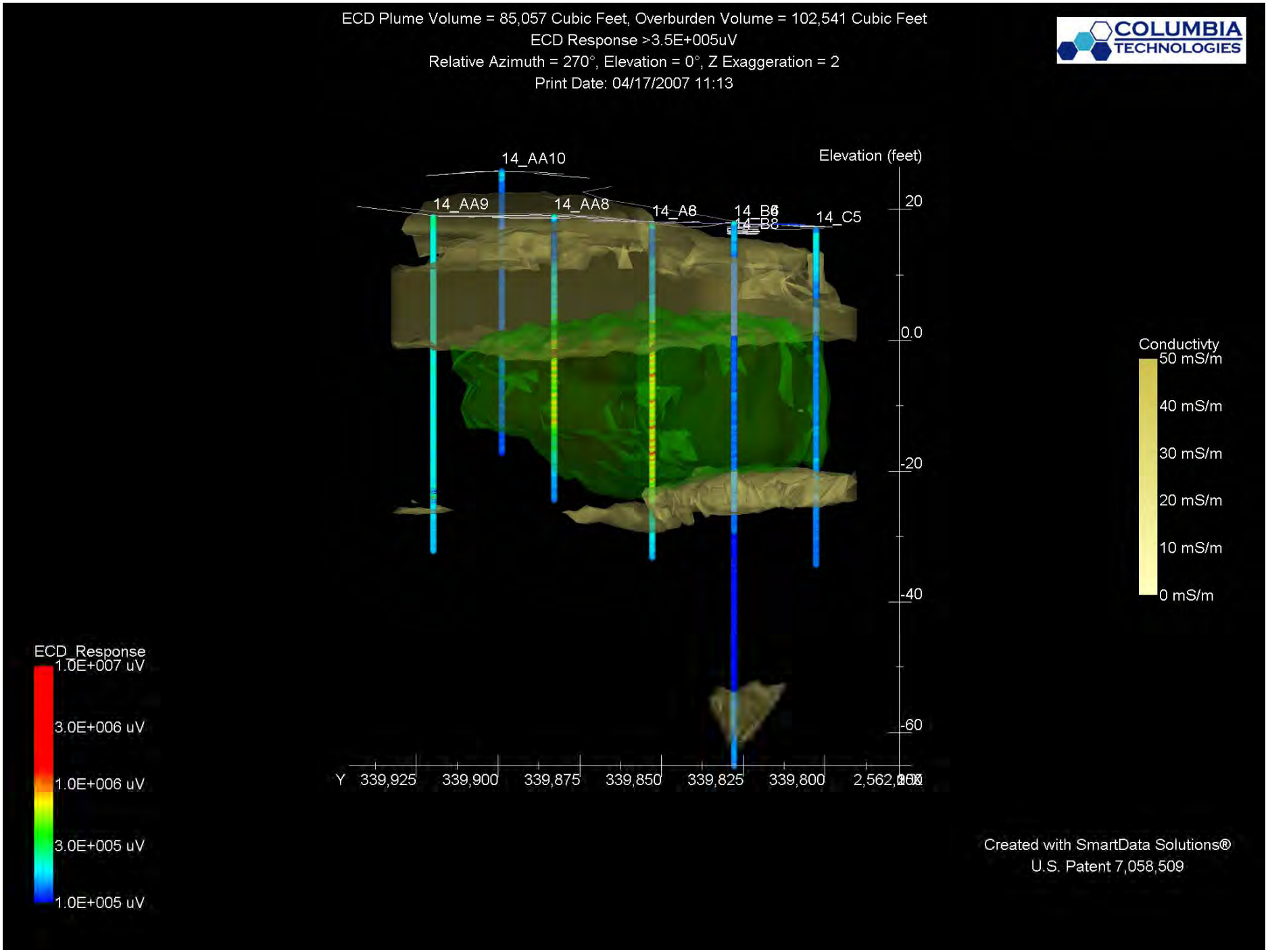

Figure 5 Transect View Relative Azimuth 270°
March 7, 2007 – April 16, 2007

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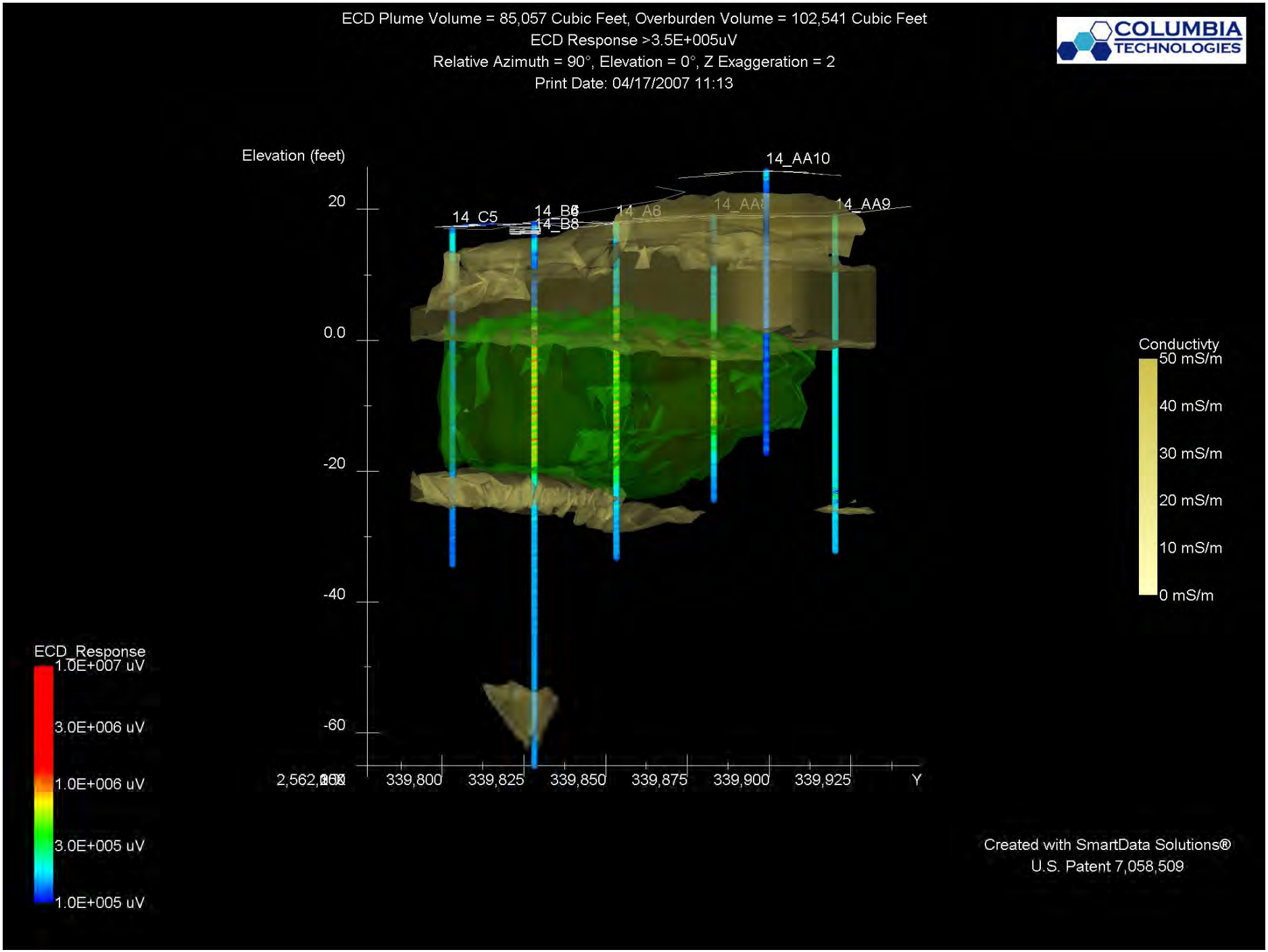

Figure 6 Transect View Relative Azimuth 90°
March 7, 2007 – April 16, 2007

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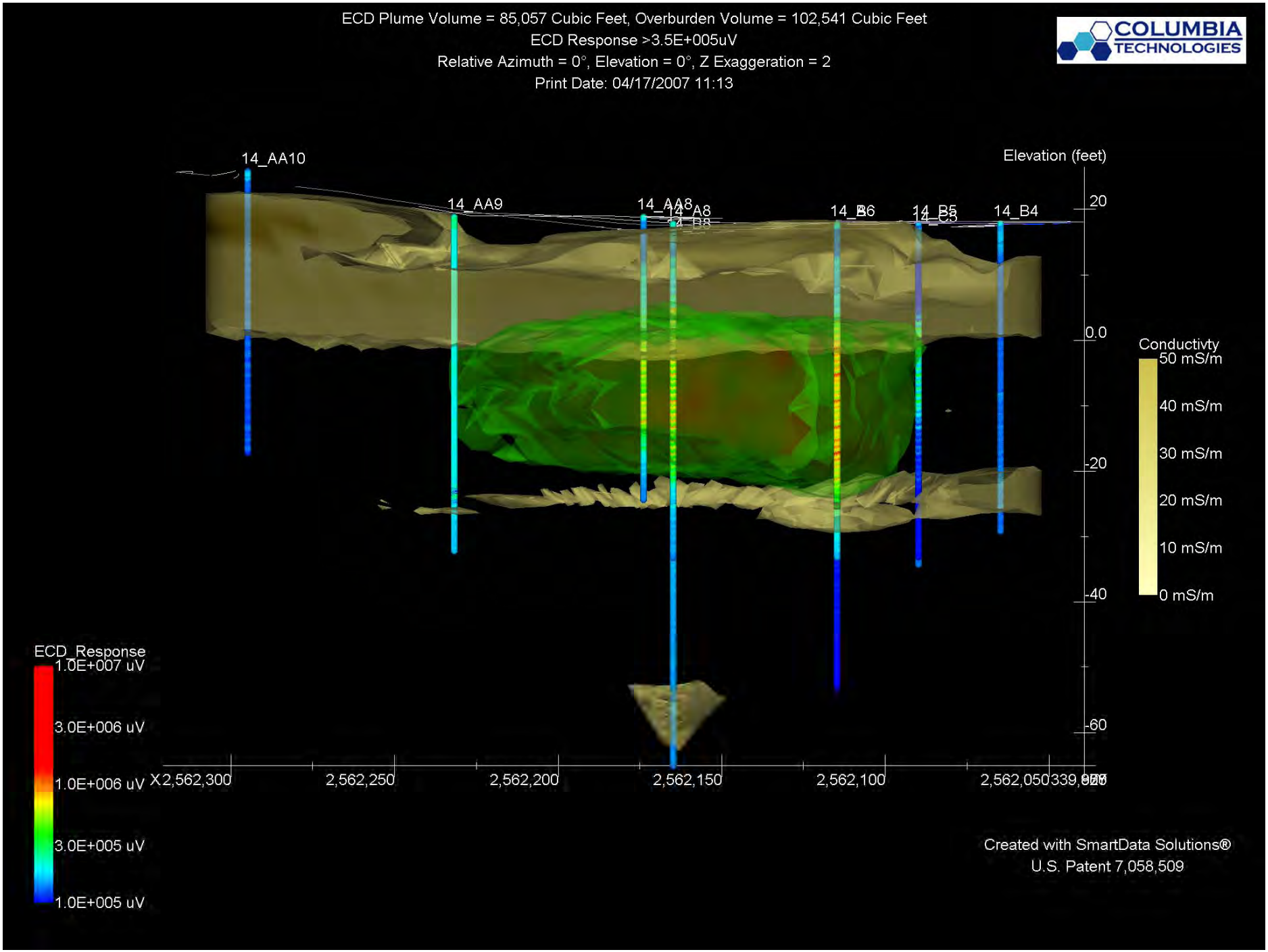

Figure 7 Transect View Relative Azimuth 0°
March 7, 2007 – April 16, 2007

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APPENDIX A

MIP Logs (Best Fit Scale)

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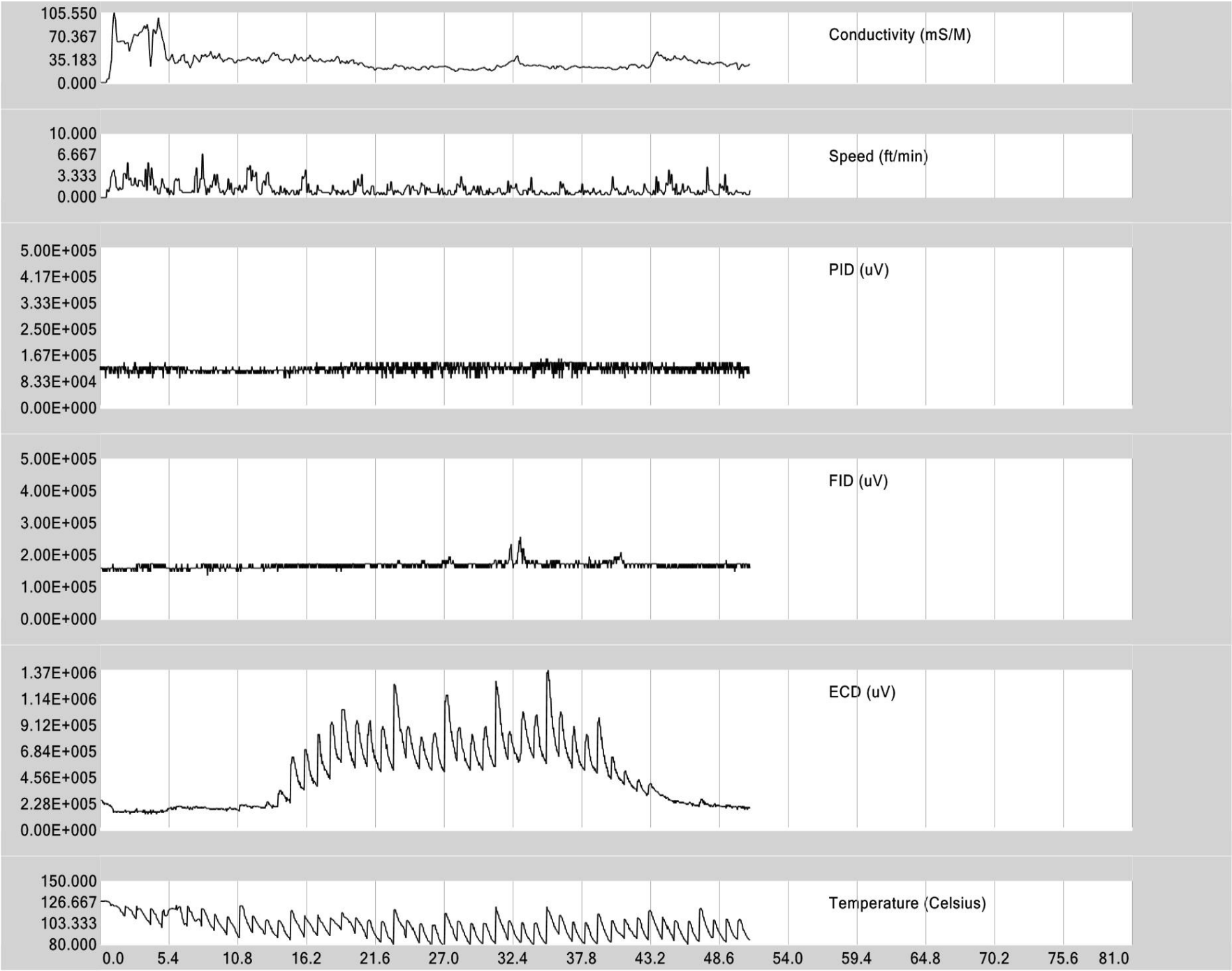
14_A6



CH2M Hill
NWS Yorktown VA Site 14
04/16/07

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Patent No. 7,058,509

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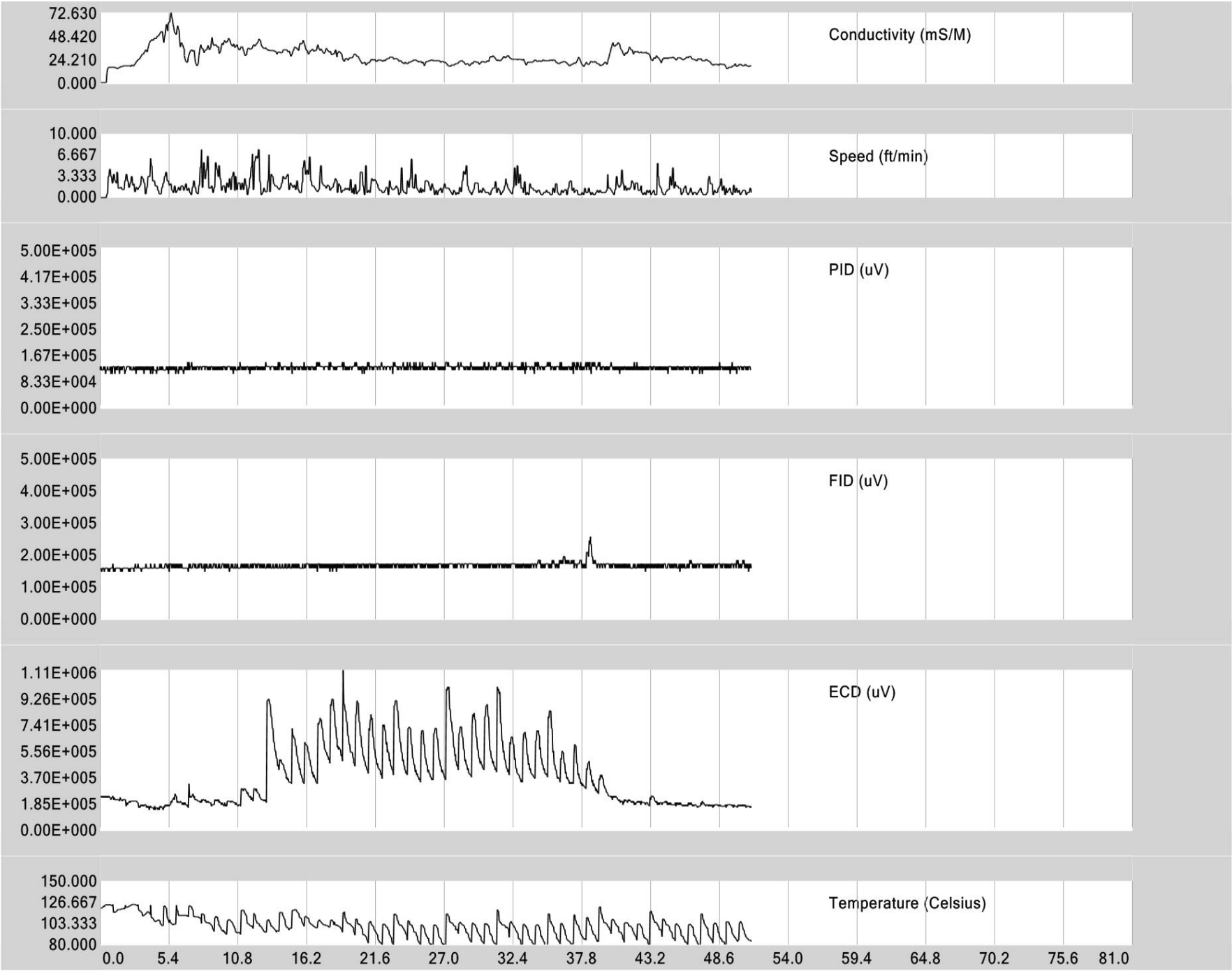
14_A8



CH2M Hill
NWS Yorktown VA Site 14
03/24/07

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Patent No. 7,058,509

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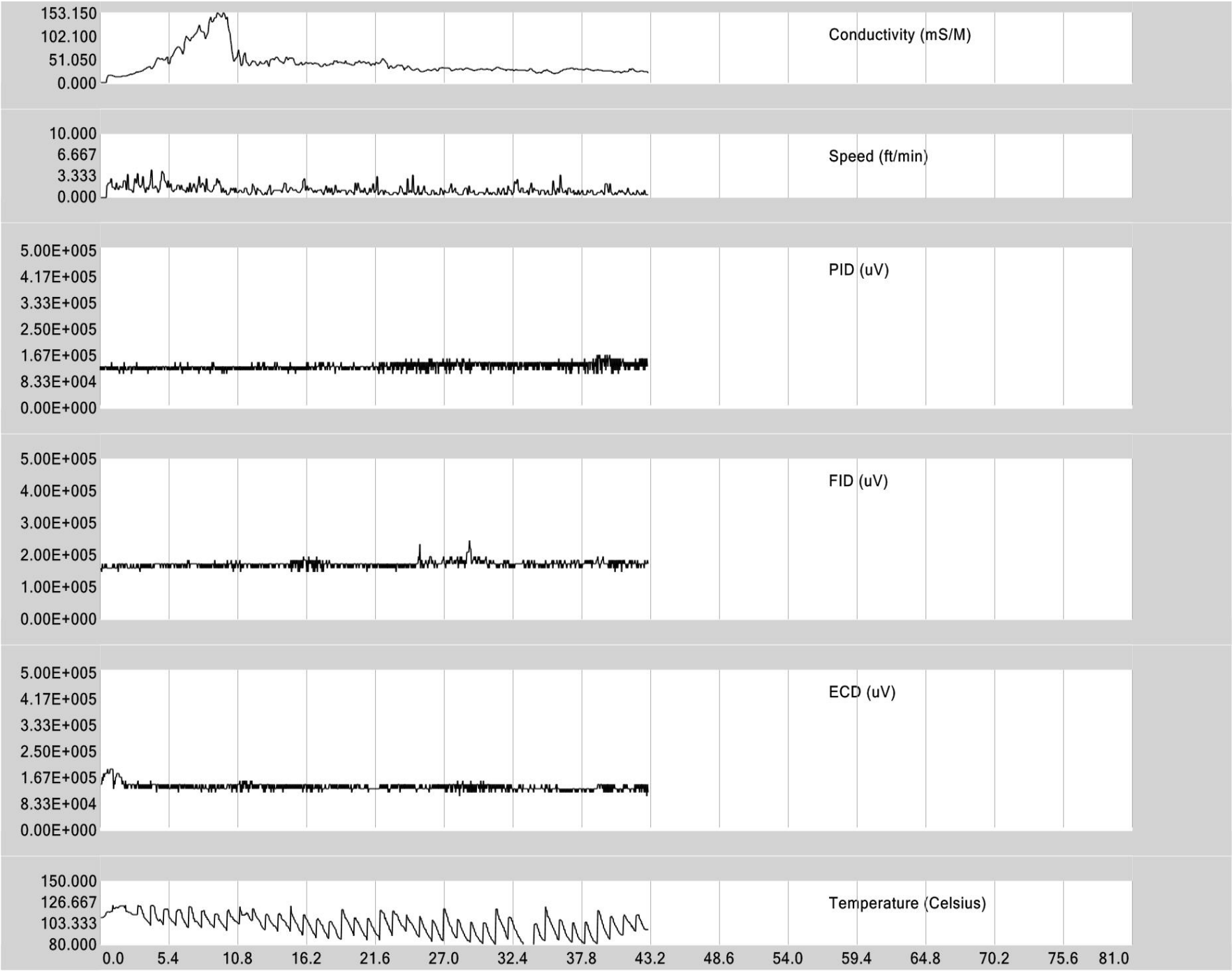
14_AA10



CH2M Hill
NWS Yorktown VA Site 14
04/16/07

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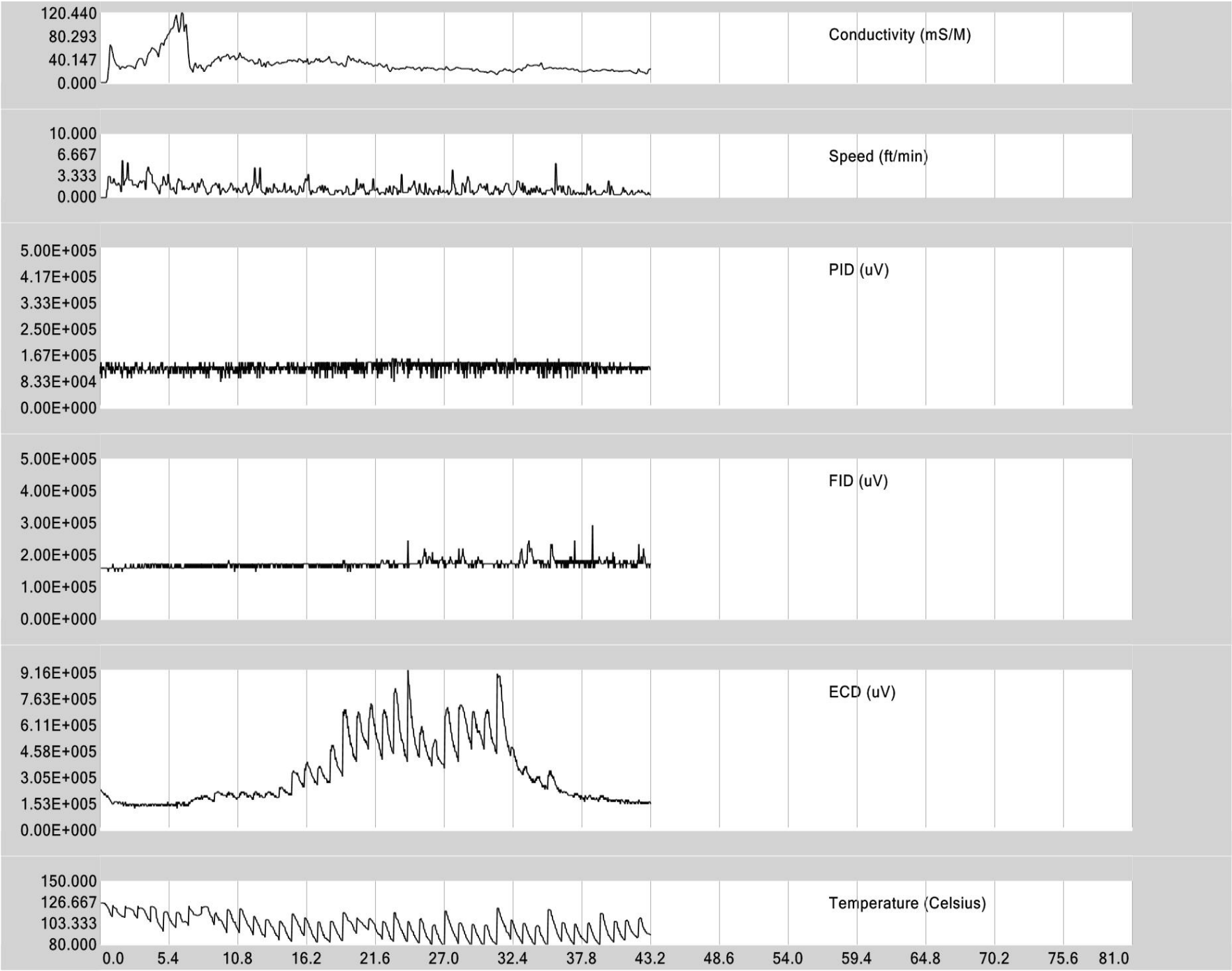
Patent No. 7,058,509

COLUMBIA TECHNOLOGIES

14_AA8



CH2M Hill
NWS Yorktown VA Site 14
04/16/07

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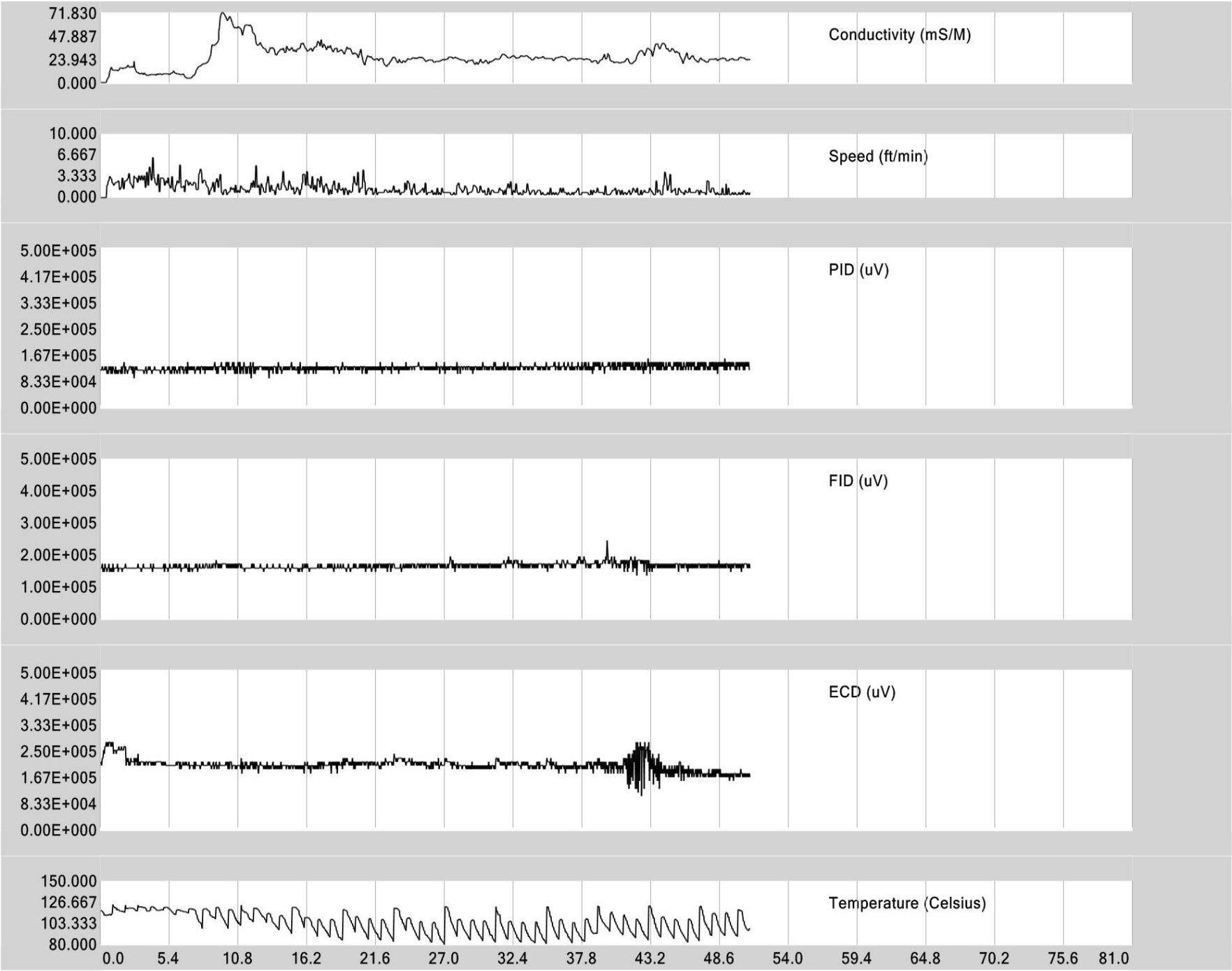
Patent No. 7,058,509

COLUMBIA TECHNOLOGIES

14_AA9



CH2M Hill
NWS Yorktown VA Site 14
04/16/07

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Patent No. 7,058,509

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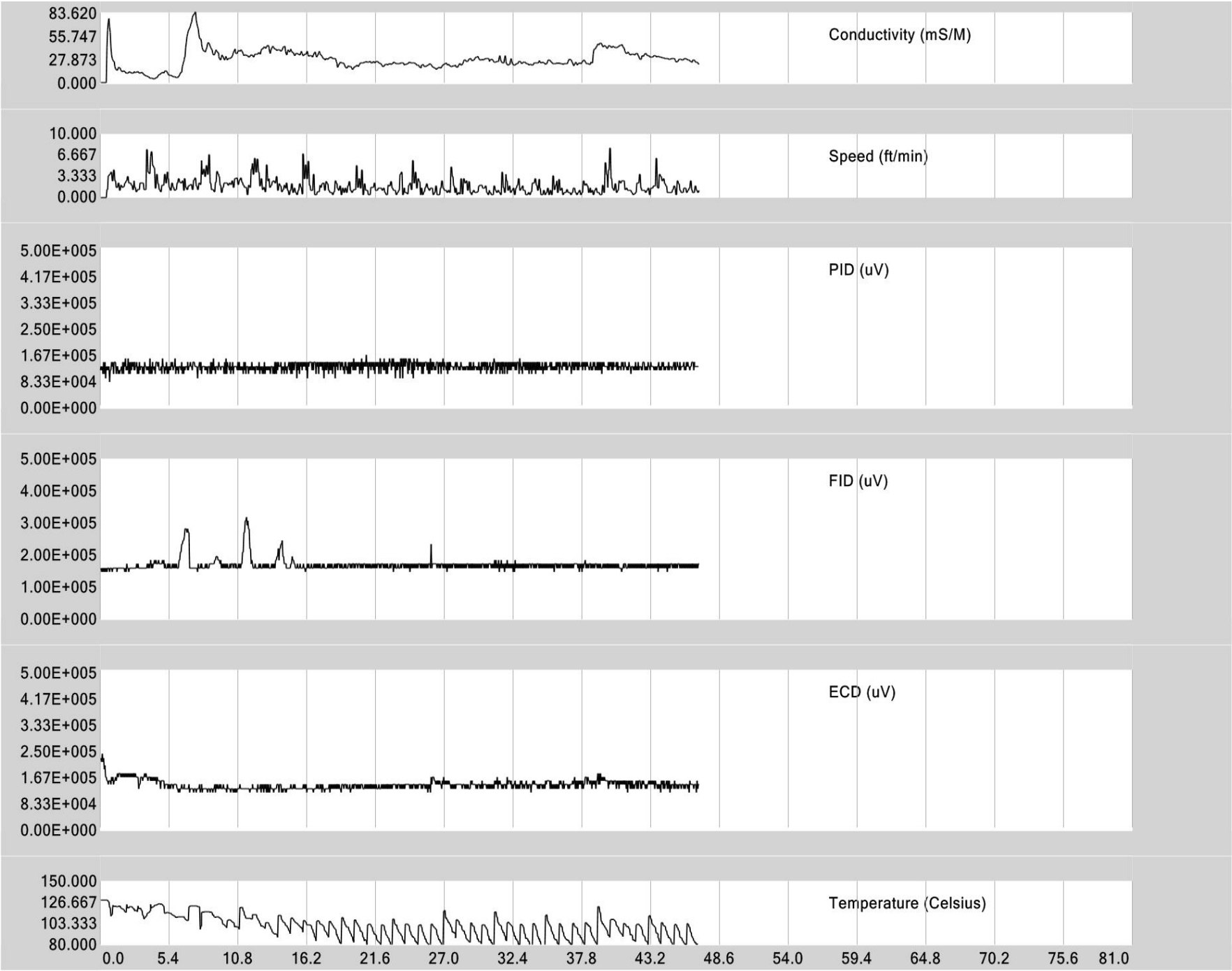
14_B4



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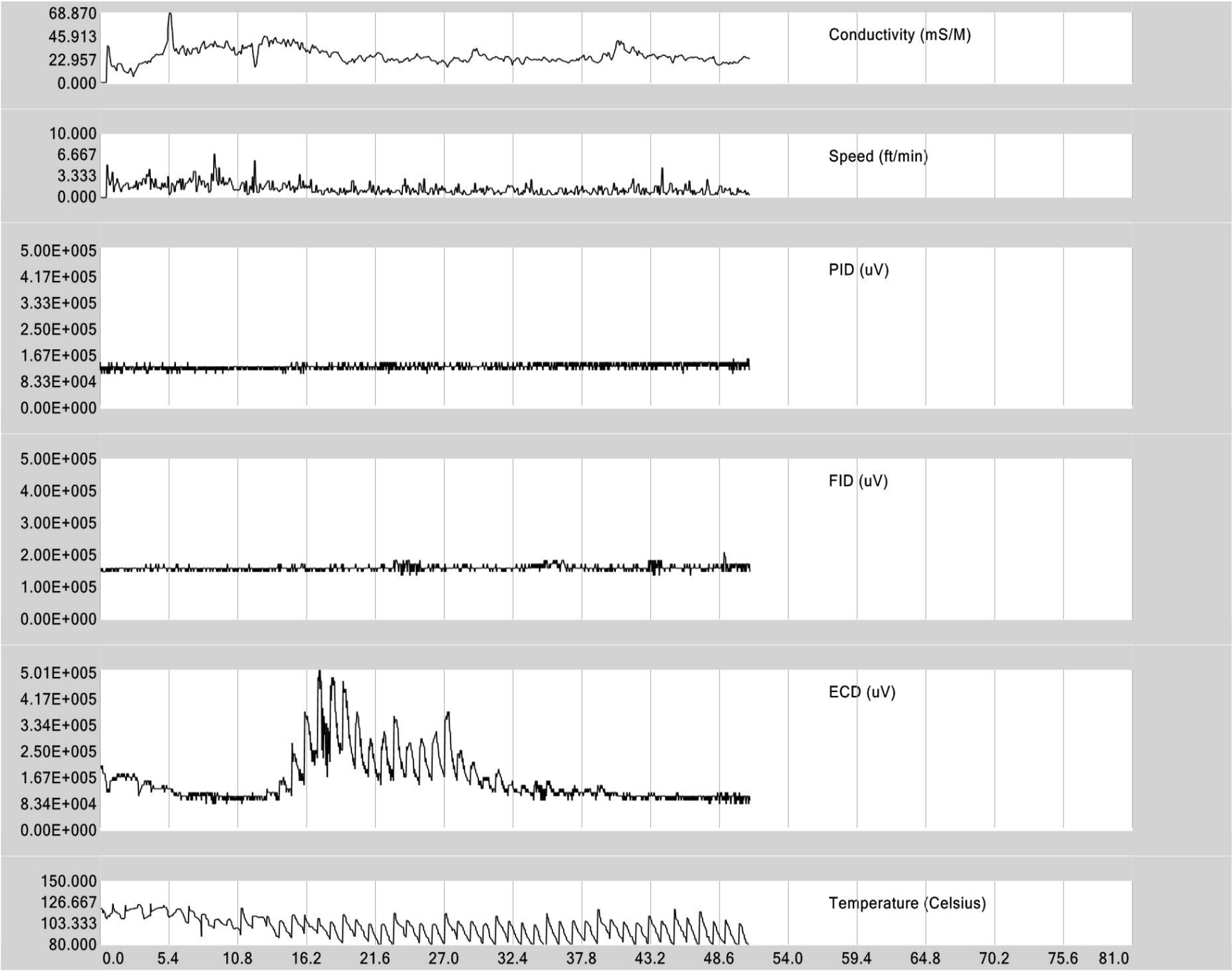

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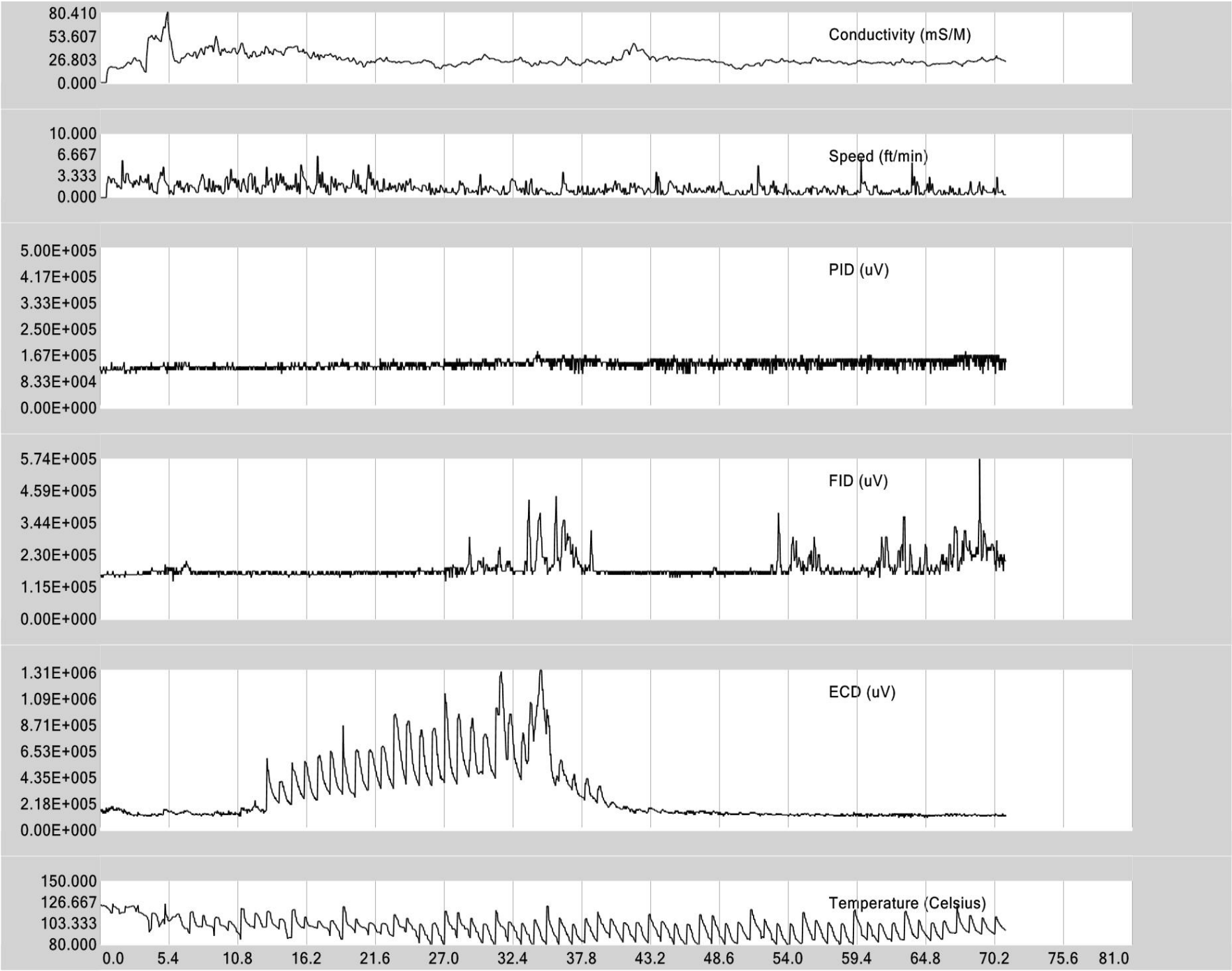

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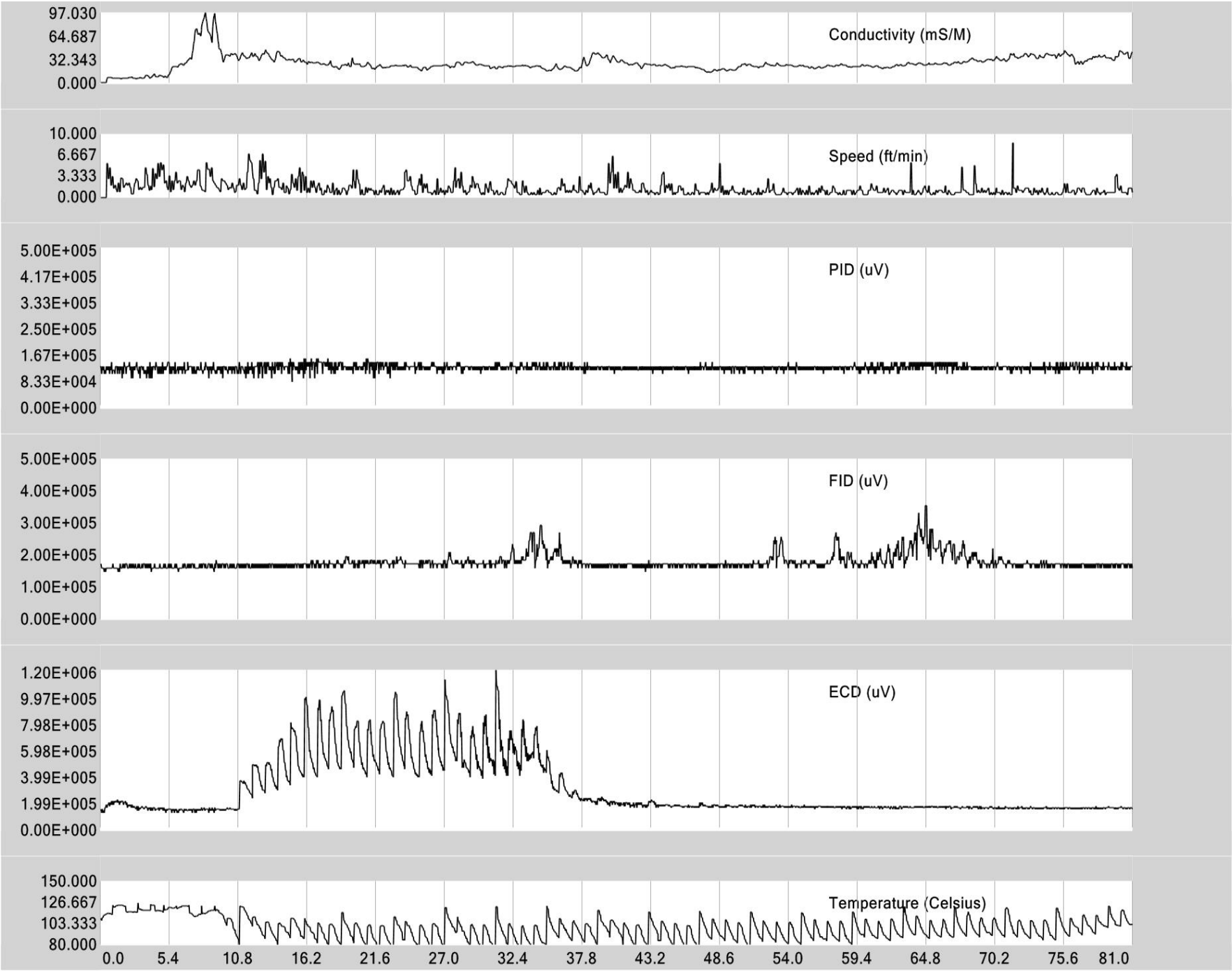

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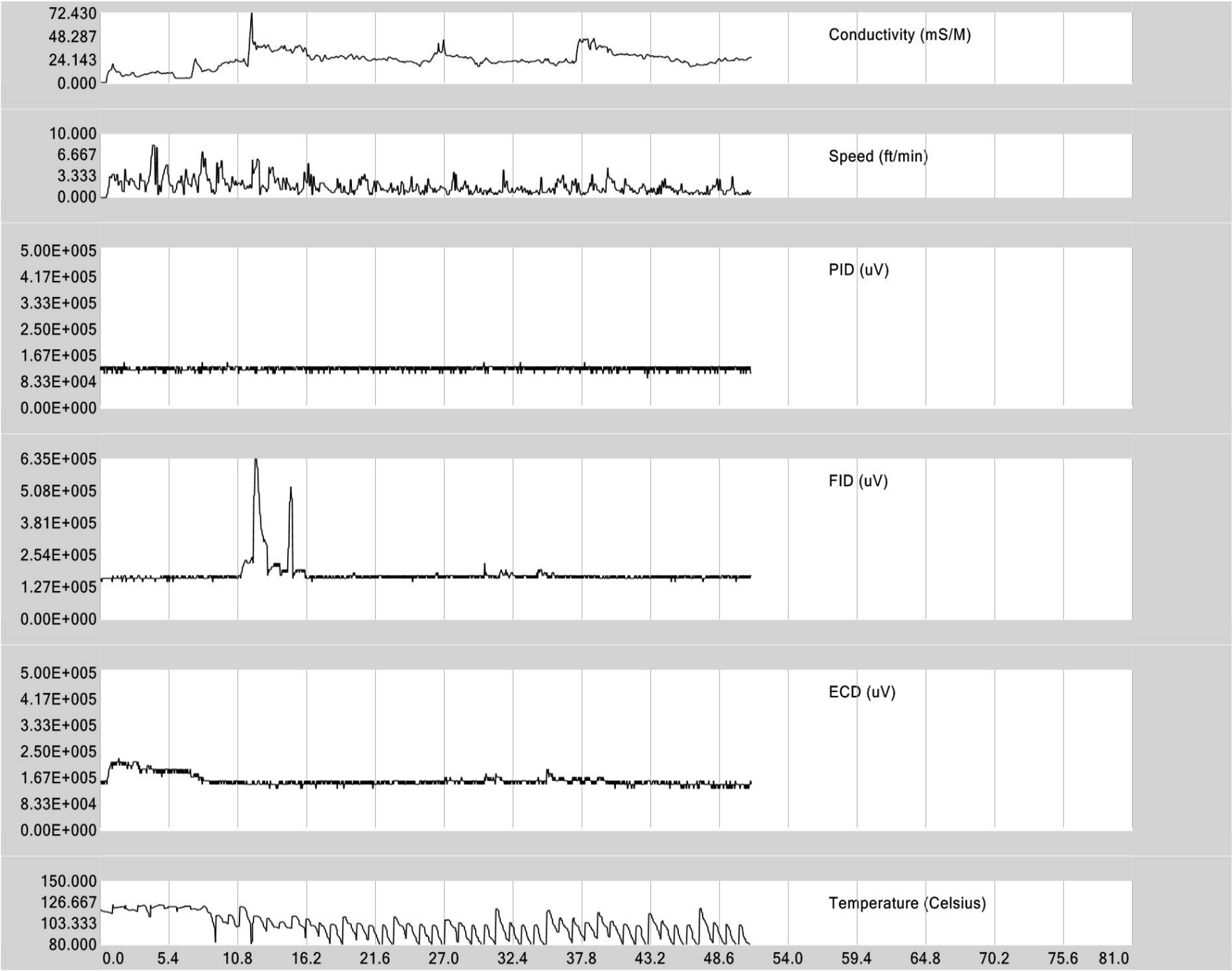

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Appendix G
Risk Tables for Site 8

TABLE 1

SELECTION OF EXPOSURE PATHWAYS

Site 8, NWS Yorktown

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	OnSite/ OffSite	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Groundwater	Air	Vapor Intrusion to Indoor Air	Industrial Worker	Adult	Inhalation	Onsite	Quant	Industrial workers could inhale vapors migrating from groundwater into indoor air.
Future	Groundwater	Groundwater	Tap Water	Resident	Adult	Dermal Absorption	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
						Ingestion	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
					Child	Dermal Absorption	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
						Ingestion	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
					Child/Adult	Dermal Absorption	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply. Child/Adult evaluated for cancer risk only.
						Ingestion	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply. Child/Adult evaluated for cancer risk only.
			Water in Excavation Pit	Construction Worker	Adult	Dermal Absorption	Onsite	Quant	Construction workers may contact groundwater while performing construction or excavation activities.
						Ingestion	Onsite	None	Ingestion of groundwater during construction activities expected to be minimal.
		Air	Water Vapors at Showerhead	Resident	Adult	Inhalation	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as future potable water supply.
					Child	Inhalation	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as future potable water supply.
					Child/Adult	Inhalation	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as future potable water supply.
			Volatilization from Water in Excavation Pit	Construction Worker	Adult	Inhalation	Onsite	Quant	Construction workers may inhale vapors from groundwater while performing construction or excavation activities.
			Vapor Intrusion to Indoor Air	Resident	Adult	Inhalation	Onsite	Quant	Future resident could inhale vapors migrating from groundwater in indoor air if future resident constructed on site.
					Child	Inhalation	Onsite	Quant	Future resident could inhale vapors migrating from groundwater into indoor air if future resident constructed on site.
					Child/Adult	Inhalation	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as future potable water supply.

Quant: will be quantitatively evaluated.

None: Not considered to be a complete pathway, therefore, not evaluated.

Table 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Site 8 Yorktown Aquifer
NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Vapor Intrusion to Indoor Air	78-93-3	2-Butanone	3.2E+00 J	3.2E+00 J	UG_L	YS08-GW01A-1107	1/9	10 - 10	3.2E+00	ND	2.3E+05 N	N/A		NO	BSL
	67-66-3	Chloroform	3.7E+00 J	3.7E+00 J	UG_L	YS08-GW07-0808	1/9	10 - 10	3.7E+00	ND	8.0E+01 M	N/A		NO	BSL
	127-18-4	Tetrachloroethene	7.4E+00 J	7.4E+00 J	UG_L	YS08-GW08-0808	1/9	10 - 10	7.4E+00	ND	5.0E+00 M	N/A		YES	ASL
	108-88-3	Toluene	7.3E-01 J	7.3E-01 J	UG_L	YS08-GW01A-1107	1/9	10 - 10	7.3E-01	ND	1.9E+03 N	N/A		NO	BSL
	79-01-6	Trichloroethene	2.0E+00 J	2.0E+00 J	UG_L	YS08-GW01-1107	1/9	10 - 10	2.0E+00	ND	5.0E+00 M	N/A		NO	BSL
	75-01-4	Vinyl chloride	1.2E+00 J	1.2E+00 J	UG_L	YS08-GW01A-1107	1/9	10 - 10	1.2E+00	ND	2.0E+00 M	N/A		NO	BSL
	88-72-2	2-Nitrotoluene	1.3E-01 J	1.3E-01 J	UG_L	YS08-GW09-0808	1/9	0.48 - 12	1.3E-01	ND	N/A	N/A		NO	NTX

[1] Minimum/Maximum detected concentrations.
[2] Maximum concentration is used for screening.
[3] Background values not available.
[4] Generic vapor intrusion screening values (USEPA, 2002); see Table 2.1 Supplement A
[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
K = Biased High
L = Biased Low
C = Carcinogenic
N = Noncarcinogenic
µg/L = microgram per liter
M = Maximum Contaminant Level from EPA's National Primary Drinking Water Standards

Table 2.1 Supplement A
Calculation of Target Groundwater Concentrations for Vapor Intrusion Screening[1]
Site 8, Yorktown Aquifer

CAS Number	Chemical	Unit Risk Factor (URF) $(\mu g/m^3)^{-1}$	Reference Concentration (RfC) mg/m^3	Target Indoor Air Concentration[2], carcinogen (C_{Cancer}) $\mu g/m^3$	Target Indoor Air Concentration[2], non-carcinogen ($C_{non-Cancer}$) $\mu g/m^3$	Target Indoor Air Concentration ($C_{target,ia}$) $\mu g/m^3$	System Temperature Henry's Law Constant (H'TS)[3] Dimensionless	Risk-Based Target Groundwater Concentration (C_{gw}) µg/L	MCL µg/L	Final Target Groundwater Concentration[4] (C_{gw}) µg/L
78-93-3	2-Butanone	N/A	5.0E+00	N/A	5.2E+02	5.2E+02	2.3E-03	2.3E+05	N/A	2.3E+05
67-66-3	Chloroform	2.3E-05	9.8E-02	1.1E-01	1.0E+01	1.1E-01	1.5E-01	7.1E-01	8.0E+01	8.0E+01
127-18-4	Tetrachloroethene	5.9E-06	2.7E-01	4.1E-01	2.8E+01	4.1E-01	7.2E-01	5.7E-01	5.0E+00	5.0E+00
108-88-3	Toluene	N/A	5.0E+00	N/A	5.2E+02	5.2E+02	2.7E-01	1.9E+03	1.0E+03	1.9E+03
79-01-6	Trichloroethene	2.0E-06	N/A	1.2E+00	N/A	1.2E+00	4.0E-01	3.1E+00	5.0E+00	5.0E+00
75-01-4	Vinyl chloride	4.4E-06	1.0E-01	1.6E-01	1.0E+01	1.6E-01	1.1E+00	1.5E-01	2.0E+00	2.0E+00
88-72-2	2-Nitrotoluene	N/A	N/A	N/A	N/A	N/A	3.2E-04	N/A	N/A	N/A

Notes:
[1] The vapor intrusion screening levels [i.e., target groundwater concentration from Table 2c, Subsurface Vapor Intrusion Guidance (USEPA, 2002)] were updated using the methodology presented in Appendix D of Subsurface Vapor Intrusion Guidance (EPA, 2002)
[2] Values are Regional Screening Levels (RSLs) for residential air (based on 10-6 for carcinogens and HQ of 0.1 for noncarcinogens). [Oak Ridge National Laboratory (ORNL), Dec. 2010].
[3] H'TS = Henry's Law Constant (demensionless) at system (i.e., groundwater) temperature. Calculated using equation 3 from USEPA, 2004.
[4] If the calculated groundwater target concentration is less than the Maximum Contaminant Level (MCL) for the compound, the target concentration is set at the MCL (USEPA, 2002).
MCL = maximum contaminant level (USEPA, 2009).
N/A = Not available.

Variables	Units	Value
$C_{target,ia}$ = Target indoor air conc., minimum	ug/m^3	Solved by Eq. 1
C_{gw} = Target groundwater conc.	ug/L	Solved by Eq. 2
TCR = Target Cancer Risk	unitless	1.00E-06
THQ = Target Hazard Quotient	unitless	1
URF = Unit Risk Factor	$(ug/m^3)^{-1}$	Chemical-specific
RfC = Reference Concentration	mg/m^3	Chemical-specific
H = Dimensionless Henry's Law Constant	unitless	Chemical-specific
alpha (α) = Attenuation Factor	unitless	0.001

Equation 1: $C_{target,ia}$ = Minimum(C_{cancer}, $C_{non-cancer}$)

Equation 2: Cgw = $C_{target,ia} \times 10^{-3}\ m^3/L * 1/H'TS * 1/\alpha$

Table 2.2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site 8 Yorktown Aquifer

NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Tap Water	78-93-3	2-Butanone	3.2E+00 J	3.2E+00 J	UG_L	YS08-GW01A-1107	1/9	10 - 10	3.2E+00	ND	7.1E+02 N	N/A		NO	BSL
	67-66-3	Chloroform	3.7E+00 J	3.7E+00 J	UG_L	YS08-GW07-0808	1/9	10 - 10	3.7E+00	ND	1.9E-01 C	8.0E+01	MCL	YES	ASL
	127-18-4	Tetrachloroethene	7.4E+00 J	7.4E+00 J	UG_L	YS08-GW08-0808	1/9	10 - 10	7.4E+00	ND	1.1E-01 C	5.0E+00	MCL	YES	ASL
	108-88-3	Toluene	7.3E-01 J	7.3E-01 J	UG_L	YS08-GW01A-1107	1/9	10 - 10	7.3E-01	ND	2.3E+02 N	1.0E+03	MCL	NO	BSL
	79-01-6	Trichloroethene	2.0E+00 J	2.0E+00 J	UG_L	YS08-GW01-1107	1/9	10 - 10	2.0E+00	ND	2.0E+00 C	5.0E+00	MCL	YES	ASL
	75-01-4	Vinyl chloride	1.2E+00 J	1.2E+00 J	UG_L	YS08-GW01A-1107	1/9	10 - 10	1.2E+00	ND	1.6E-02 C	2.0E+00	MCL	YES	ASL
	117-81-7	bis(2-Ethylhexyl)phthalate	9.6E+01	9.6E+01	UG_L	YS08-GW01-1107	1/9	9.4 - 9.7	9.6E+01	ND	4.8E+00 C	6.0E+00	MCL	YES	ASL
	99-35-4	1,3,5-Trinitrobenzene	3.2E-01	1.4E+01	UG_L	YS08-GW08-0808	2/9	0.096 - 2.4	1.4E+01	ND	1.1E+02 N	N/A		NO	BSL
	118-96-7	2,4,6-Trinitrotoluene	3.0E-01	5.5E+01	UG_L	YS08-GW08-0808	3/9	0.14 - 3.6	5.5E+01	ND	1.8E+00 C**	N/A		YES	ASL
	35572-78-2	2-Amino-4,6-dinitrotoluene	7.0E-01	7.3E+01	UG_L	YS08-GW08-0808	3/9	0.29 - 7.3	7.3E+01	ND	7.3E+00 N	N/A		YES	ASL
	88-72-2	2-Nitrotoluene	1.3E-01 J	1.3E-01 J	UG_L	YS08-GW09-0808	1/9	0.48 - 12	1.3E-01	ND	3.1E-01 C	N/A		NO	BSL
	618-87-1	3,5-Dinitroaniline	4.4E-01 J	4.4E+00 J	UG_L	YS08-GW08-0808	2/9	0.96 - 24	4.4E+00	ND	3.7E-01 N	N/A		YES	ASL
	19406-51-0	4-Amino-2,6-dinitrotoluene	8.9E-01	8.2E+01	UG_L	YS08-GW08-0808	3/9	0.14 - 3.6	8.2E+01	ND	7.3E+00 N	N/A		YES	ASL
	2691-41-0	HMX	2.9E-01	8.3E+01	UG_L	YS08-GW08-0808	5/9	0.14 - 3.6	8.3E+01	2.4E+01 J	1.8E+02 N	N/A		NO	BSL
	121-82-4	RDX	4.0E-01	3.0E+02	UG_L	YS08-GW08-0808	5/9	0.24 - 6.1	3.0E+02	ND	6.1E-01 C	N/A		YES	ASL
	7429-90-5	Aluminum-dissolved	9.0E+01 J	4.4E+02 J	UG_L	YS08-GW01A-1107	4/9	200 - 200	4.4E+02	ND	3.7E+03 N	50-200	SMCL	NO	BSL
	7440-36-0	Antimony-dissolved	2.0E+00 J	2.0E+00 J	UG_L	YS08-GW01A-1107	1/9	60 - 60	2.0E+00	ND	1.5E+00 N	6.0E+00	MCL	YES	ASL
	7440-39-3	Barium-dissolved	1.4E+01 J	4.0E+01 J	UG_L	YS08-GW05-1107	8/9	200 - 200	4.0E+01	3.4E+01 J	7.3E+02 N	2.0E+03	MCL	NO	BSL
	7440-70-2	Calcium-dissolved	5.8E+03 J	1.7E+05	UG_L	YS08-GW05-1107	9/9	5000 - 5000	1.7E+05	1.3E+05	N/A	N/A		NO	NUT
	7440-47-3	Chromium-dissolved	2.3E+00 J	3.1E+01	UG_L	YS08-GW07-0808	2/9	10 - 10	3.1E+01	ND	4.3E-02 C	N/A		YES	ASL
	7440-50-8	Copper-dissolved	2.0E+00 J	4.2E+00 J	UG_L	YS08-GW01A-1107	4/9	25 - 25	4.2E+00	ND	1.5E+02 N	1.5E+01	AL	NO	BSL
	7439-89-6	Iron-dissolved	3.4E+01 J	1.7E+02	UG_L	YS08-GW05-1107	3/9	100 - 100	1.7E+02	8.1E+01 J	2.6E+03 N	3.0E+02	SMCL	NO	BSL
	7439-92-1	Lead-dissolved	1.8E+00 J	3.4E+00 J	UG_L	YS08-GW07-0808	2/9	10 - 10	3.4E+00	ND	N/A	1.5E+01	MCL	NO	NTX
	7439-95-4	Magnesium-dissolved	1.0E+03 J	3.2E+03 J	UG_L	YS08-GW09P-0808	9/9	5000 - 5000	3.2E+03	2.8E+03 J	N/A	N/A		NO	NUT
	7439-96-5	Manganese-dissolved	3.5E+00 J	2.0E+02	UG_L	YS08-GW09P-0808	4/9	15 - 15	2.0E+02	6.8E+01	8.8E+01 N	5.0E+01	SMCL	YES	ASL
	7440-02-0	Nickel-dissolved	9.3E-01 J	1.8E+00 J	UG_L	YS08-GW01A-1107	4/9	40 - 40	1.8E+00	1.8E+00 J	7.3E+01 N	N/A		NO	BSL
	7440-09-7	Potassium-dissolved	9.6E+02 J	3.8E+04 J	UG_L	YS08-GW01A-1107	9/9	5000 - 5000	3.8E+04	2.0E+03 J	N/A	N/A		NO	NUT
	7440-23-5	Sodium-dissolved	1.0E+04	6.8E+04 J	UG_L	YS08-GW01A-1107	9/9	5000 - 5000	6.8E+04	9.3E+03	N/A	N/A		NO	NUT
	7440-62-2	Vanadium-dissolved	1.1E+00 J	2.9E+00 J	UG_L	YS08-GW01A-1107	2/9	50 - 50	2.9E+00	ND	1.8E+01 N	N/A		NO	BSL

Table 2.2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site 8 Yorktown Aquifer

NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection

[1] Following USEPA Region III guidance (*Guidance on the Selection of Analytical Metal Results from Monitoring Well Samples for Use in Quantitative Assessment* of Risk, USEPA, 1992), dissolved inorganic groundwater data used for tap water because an order of magnitude difference noted between dissolved and total results. (See Appendix D, *Final Groundwater Raw Analytical Results 2007-2008*.)

[2] Maximum concentration is used for screening.

[3] Background values from sample YS08-GW06-1107

[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Adjusted (n RSLs adjusted by dividing by 10) tap water RSLs.
RSL value for 1,3-dinitrobenzene used as a surrogate for 3,5-dinitroaniline.
RSL value for Manganese (water) used as a surrogate for manganese.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
K = Biased High
L = Biased Low
C = Carcinogenic
C** = N screening level < 10x C screening level, therefore N screening value/10 used as screening level
N = Noncarcinogenic
UG_L = micrograms per liter
ND = not detected
N/A = not available, not applicable
MCL = Maximum Contaminant Level, Primary Drinking Water Standards
SMCL = Maximum Contaminant Level, Secondary Drinking Water Standards
AL = Action Level, Safe Drinking Water Act

Table 2.3

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site 8 Yorktown Aquifer

NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier		Maximum [1] Concentration Qualifier		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Water Vapors at Showerhead	78-93-3	2-Butanone	3.2E+00	J	3.2E+00	J	UG_L	YS08-GW01A-1107	1/9	10 - 10	3.2E+00	ND	7.1E+02	N	N/A		NO	BSL
	67-66-3	Chloroform	3.7E+00	J	3.7E+00	J	UG_L	YS08-GW07-0808	1/9	10 - 10	3.7E+00	ND	1.9E-01	C	8.0E+01	MCL	YES	ASL
	127-18-4	Tetrachloroethene	7.4E+00	J	7.4E+00	J	UG_L	YS08-GW08-0808	1/9	10 - 10	7.4E+00	ND	1.1E-01	C	5.0E+00	MCL	YES	ASL
	108-88-3	Toluene	7.3E-01	J	7.3E-01	J	UG_L	YS08-GW01A-1107	1/9	10 - 10	7.3E-01	ND	2.3E+02	N	1.0E+03	MCL	NO	BSL
	79-01-6	Trichloroethene	2.0E+00	J	2.0E+00	J	UG_L	YS08-GW01-1107	1/9	10 - 10	2.0E+00	ND	2.0E+00	C	5.0E+00	MCL	YES	ASL
	75-01-4	Vinyl chloride	1.2E+00	J	1.2E+00	J	UG_L	YS08-GW01A-1107	1/9	10 - 10	1.2E+00	ND	1.6E-02	C	2.0E+00	MCL	YES	ASL
	88-72-2	2-Nitrotoluene	1.3E-01	J	1.3E-01	J	UG_L	YS08-GW09-0808	1/9	0.48 - 12	1.3E-01	ND	3.1E-01	C	N/A		NO	BSL

[1] Minumum and maximum detected concentration.

[2] Maximum concentration is used for screening.

[3] Background values not available.

[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Adjusted (n RSLs adjusted by dividing by 10) tap water RSLs.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
K = Biased High
L = Biased Low
C = Carcinogenic
N = Noncarcinogenic
UG_L = micrograms per liter
ND = not detected
N/A = not available, not applicable
MCL = Maximum Contaminant Level, Primary Drinking Water Standards

Table 2.2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site 8 Yorktown Aquifer

NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Tap Water	78-93-3	2-Butanone	3.2E+00 J	3.2E+00 J	UG_L	YS08-GW01A-1107	1/9	10 - 10	3.2E+00	ND	7.1E+02 N	N/A		NO	BSL
	67-66-3	Chloroform	3.7E+00 J	3.7E+00 J	UG_L	YS08-GW07-0808	1/9	10 - 10	3.7E+00	ND	1.9E-01 C	8.0E+01	MCL	YES	ASL
	127-18-4	Tetrachloroethene	7.4E+00 J	7.4E+00 J	UG_L	YS08-GW08-0808	1/9	10 - 10	7.4E+00	ND	1.1E-01 C	5.0E+00	MCL	YES	ASL
	108-88-3	Toluene	7.3E-01 J	7.3E-01 J	UG_L	YS08-GW01A-1107	1/9	10 - 10	7.3E-01	ND	2.3E+02 N	1.0E+03	MCL	NO	BSL
	79-01-6	Trichloroethene	2.0E+00 J	2.0E+00 J	UG_L	YS08-GW01-1107	1/9	10 - 10	2.0E+00	ND	2.0E+00 C	5.0E+00	MCL	YES	ASL
	75-01-4	Vinyl chloride	1.2E+00 J	1.2E+00 J	UG_L	YS08-GW01A-1107	1/9	10 - 10	1.2E+00	ND	1.6E-02 C	2.0E+00	MCL	YES	ASL
	117-81-7	bis(2-Ethylhexyl)phthalate	9.6E+01	9.6E+01	UG_L	YS08-GW01-1107	1/9	9.4 - 9.7	9.6E+01	ND	4.8E+00 C	6.0E+00	MCL	YES	ASL
	99-35-4	1,3,5-Trinitrobenzene	3.2E-01	1.4E+01	UG_L	YS08-GW08-0808	2/9	0.096 - 2.4	1.4E+01	ND	1.1E+02 N	N/A		NO	BSL
	118-96-7	2,4,6-Trinitrotoluene	3.0E-01	5.5E+01	UG_L	YS08-GW08-0808	3/9	0.14 - 3.6	5.5E+01	ND	1.8E+00 C**	N/A		YES	ASL
	35572-78-2	2-Amino-4,6-dinitrotoluene	7.0E-01	7.3E+01	UG_L	YS08-GW08-0808	3/9	0.29 - 7.3	7.3E+01	ND	7.3E+00 N	N/A		YES	ASL
	88-72-2	2-Nitrotoluene	1.3E-01 J	1.3E-01 J	UG_L	YS08-GW09-0808	1/9	0.48 - 12	1.3E-01	ND	3.1E-01 C	N/A		NO	BSL
	618-87-1	3,5-Dinitroaniline	4.4E-01 J	4.4E+00 J	UG_L	YS08-GW08-0808	2/9	0.96 - 24	4.4E+00	ND	3.7E-01 N	N/A		YES	ASL
	19406-51-0	4-Amino-2,6-dinitrotoluene	8.9E-01	8.2E+01	UG_L	YS08-GW08-0808	3/9	0.14 - 3.6	8.2E+01	ND	7.3E+00 N	N/A		YES	ASL
	2691-41-0	HMX	2.9E-01	8.3E+01	UG_L	YS08-GW08-0808	5/9	0.14 - 3.6	8.3E+01	2.4E+01 J	1.8E+02 N	N/A		NO	BSL
	121-82-4	RDX	4.0E-01	3.0E+02	UG_L	YS08-GW08-0808	5/9	0.24 - 6.1	3.0E+02	ND	6.1E-01 C	N/A		YES	ASL
	7429-90-5	Aluminum	2.2E+02	3.3E+03	UG_L	YS08-GW07-0808	9/9	200 - 200	3.3E+03	1.4E+03	3.7E+03 N	50-200	SMCL	NO	BSL
	7440-36-0	Antimony	2.0E+00 J	2.0E+00 J	UG_L	YS08-GW01A-1107	1/9	60 - 60	2.0E+00	2.6E+00 J	1.5E+00 N	6.0E+00	MCL	YES	ASL
	7440-38-2	Arsenic	4.3E+00 J	1.2E+01	UG_L	YS08-GW07-0808	4/9	10 - 10	1.2E+01	8.1E+00 J	4.5E-02 C	1.0E+01	MCL	YES	ASL
	7440-39-3	Barium	1.5E+01 J	5.1E+01 J	UG_L	YS08-GW01A-1107	9/9	200 - 200	5.1E+01	4.1E+01 J	7.3E+02 N	2.0E+03	MCL	NO	BSL
	7440-41-7	Beryllium	1.9E-01 J	1.9E-01 J	UG_L	YS08-GW04-1107	1/9	5 - 5	1.9E-01	ND	7.3E+00 N	4.0E+00	MCL	NO	BSL
	7440-70-2	Calcium	1.8E+04	1.8E+05	UG_L	YS08-GW05-1107	9/9	5000 - 5000	1.8E+05	1.4E+05	N/A	N/A		NO	NUT
	7440-47-3	Chromium	1.7E+00 J	4.7E+01	UG_L	YS08-GW07-0808	8/9	10 - 10	4.7E+01	6.2E+00 J	4.3E-02 C	N/A		YES	ASL
	7440-48-4	Cobalt	1.2E+00 J	1.6E+00 J	UG_L	YS08-GW07-0808	3/9	50 - 50	1.6E+00	ND	1.1E+00 N	N/A		YES	ASL
	7440-50-8	Copper	3.5E+00 J	9.7E+00 J	UG_L	YS08-GW01A-1107	3/9	25 - 25	9.7E+00	ND	1.5E+02 N	1.5E+01	AL	NO	BSL
	7439-89-6	Iron	3.8E+02 L	6.2E+03	UG_L	YS08-GW07-0808	9/9	100 - 100	6.2E+03	2.8E+03 L	2.6E+03 N	3.0E+02	SMCL	YES	ASL
	7439-92-1	Lead	1.6E+00 J	6.1E+00 J	UG_L	YS08-GW07-0808	2/9	10 - 10	6.1E+00	ND	N/A	1.5E+01	MCL	NO	NTX
	7439-95-4	Magnesium	1.3E+03 J	3.8E+03 J	UG_L	YS08-GW05-1107	9/9	5000 - 5000	3.8E+03	3.1E+03 J	N/A	N/A		NO	NUT
	7439-96-5	Manganese	2.6E+00 J	2.1E+02	UG_L	YS08-GW09P-0808	9/9	15 - 15	2.1E+02	7.4E+01	8.8E+01 N	5.0E+01	SMCL	YES	ASL
	7440-02-0	Nickel	9.6E-01 J	7.1E+00 J	UG_L	YS08-GW07-0808	6/9	40 - 40	7.1E+00	4.8E+00 J	7.3E+01 N	N/A		NO	BSL
	7440-09-7	Potassium	1.1E+03 J	3.8E+04	UG_L	YS08-GW01A-1107	9/9	5000 - 5000	3.8E+04	2.5E+03 J	N/A	N/A		NO	NUT
	7440-23-5	Sodium	9.9E+03	7.5E+04	UG_L	YS08-GW01A-1107	9/9	5000 - 5000	7.5E+04	9.5E+03	N/A	N/A		NO	NUT
	7440-62-2	Vanadium	1.3E+00 J	2.1E+01 J	UG_L	YS08-GW07-0808	6/9	50 - 50	2.1E+01	7.4E+00 J	1.8E+01 N	N/A		YES	ASL
	7440-66-6	Zinc	7.5E+00 J	1.1E+01 J	UG_L	YS08-GW01A-1107	4/9	60 - 60	1.1E+01	1.1E+01 J	1.1E+03 N	5.0E+03	MCL	NO	BSL

[1] Analytical data from unfiltered samples used for construction worker exposure to groundwater because the construction worker is assumed to come in direct contact with groundwater at the site.

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/

Table 2.2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site 8 Yorktown Aquifer

NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection

[2] Maximum concentration is used for screening.

[3] Background values from sample YS08-GW06-1107

[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online].
Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Adjusted (n RSLs adjusted by dividing by 10) tap water RSLs.
RSL value for 1,3-dinitrobenzene used as a surrogate for 3,5-dinitroaniline.
RSL value for Manganese (water) used as a surrogate for manganese.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

To Be Considered

J = Estimated Value
K = Biased High
L = Biased Low
C = Carcinogenic
C** = N screening level < 10x C screening level, therefore
N screening value/10 used as screening level
N = Noncarcinogenic
UG_L = micrograms per liter
ND = not detected
N/A = not available, not applicable
MCL = Maximum Contaminant Level, Primary Drinking Water Standards
SMCL = Maximum Contaminant Level, Secondary Drinking Water Standards
AL = Action Level, Safe Drinking Water Act

Table 2.5

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site 8 Yorktown Aquifer

NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier		Maximum [1] Concentration Qualifier		Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Water Vapors in Excavation Pit	78-93-3	2-Butanone	3.2E+00	J	3.2E+00	J	UG_L	YS08-GW01A-1107	1/9	10 - 10	3.2E+00	ND	7.1E+02	N	N/A		NO	BSL
	67-66-3	Chloroform	3.7E+00	J	3.7E+00	J	UG_L	YS08-GW07-0808	1/9	10 - 10	3.7E+00	ND	1.9E-01	C	8.0E+01	MCL	YES	ASL
	127-18-4	Tetrachloroethene	7.4E+00	J	7.4E+00	J	UG_L	YS08-GW08-0808	1/9	10 - 10	7.4E+00	ND	1.1E-01	C	5.0E+00	MCL	YES	ASL
	108-88-3	Toluene	7.3E-01	J	7.3E-01	J	UG_L	YS08-GW01A-1107	1/9	10 - 10	7.3E-01	ND	2.3E+02	N	1.0E+03	MCL	NO	BSL
	79-01-6	Trichloroethene	2.0E+00	J	2.0E+00	J	UG_L	YS08-GW01-1107	1/9	10 - 10	2.0E+00	ND	2.0E+00	C	5.0E+00	MCL	YES	ASL
	75-01-4	Vinyl chloride	1.2E+00	J	1.2E+00	J	UG_L	YS08-GW01A-1107	1/9	10 - 10	1.2E+00	ND	1.6E-02	C	2.0E+00	MCL	YES	ASL
	88-72-2	2-Nitrotoluene	1.3E-01	J	1.3E-01	J	UG_L	YS08-GW09-0808	1/9	0.48 - 12	1.3E-01	ND	3.1E-01	C	N/A		NO	BSL

[1] Minumum and maximum detected concentration.

[2] Maximum concentration is used for screening.

[3] Background values not available.

[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Adjusted (n RSLs adjusted by dividing by 10) tap water RSLs.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
K = Biased High
L = Biased Low
C = Carcinogenic
N = Noncarcinogenic
UG_L = micrograms per liter
ND = not detected
N/A = not available, not applicable
MCL = Maximum Contaminant Level, Primary Drinking Water Standards

Table 3.1.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Shallow Aquifer - Indoor Air (Industrial Worker)	Tetrachloroethene	NA	NA	NA	NA	4.7E-02	ug/m^3	Max	(1)

(1) Indoor air concentrations calculated using Johnson and Ettinger model. See output from Johnson and Ettinger model in Table 11.2.

Max = Maximum concentration
UG/M^3 = micrograms per cubic meter
NA = Not applicable

Table 3.2.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Tap Water											
	Chloroform	UG_L	2.9E+00	5.7E+00	G	3.7E+00	J	3.7E+00	UG_L	Max	3, 5
	Tetrachloroethene	UG_L	5.3E+00	5.8E+00	N	7.4E+00	J	5.8E+00	UG_L	95% Mod-t	4
	Trichloroethene	UG_L	4.7E+00	5.2E+00	N	2.0E+00	J	2.0E+00	UG_L	Max	4, 5
	Vinyl chloride	UG_L	4.6E+00	5.3E+00	NP	1.2E+00	J	1.2E+00	UG_L	Max	4, 5
	bis(2-Ethylhexyl)phthalate	UG_L	1.5E+01	5.9E+01	NP	9.6E+01		5.9E+01	UG_L	95% Cheb-m	4
	2,4,6-Trinitrotoluene	UG_L	6.5E+00	7.6E+01	NP	5.5E+01		5.5E+01	UG_L	Max	1, 5
	2-Amino-4,6-dinitrotoluene	UG_L	8.9E+00	1.0E+02	NP	7.3E+01		7.3E+01	UG_L	Max	1, 5
	3,5-Dinitroaniline	UG_L	8.8E-01	4.5E+00	NP	4.4E+00	J	4.4E+00	UG_L	Max	4, 5
	4-Amino-2,6-dinitrotoluene	UG_L	9.9E+00	1.1E+02	NP	8.2E+01		8.2E+01	UG_L	Max	1, 5
	RDX	UG_L	3.6E+01	1.0E+02	NP	3.0E+02		1.0E+02	UG_L	95% KM-BCA	1, 3
	Antimony-dissolved	UG_L	2.7E+01	4.0E+01	NP	2.0E+00	J	2.0E+00	UG_L	Max	4, 5
	Chromium-dissolved	UG_L	5.5E+00	3.2E+01	NP	3.1E+01		3.1E+01	UG_L	Max	4, 5
	Manganese-dissolved	UG_L	3.2E+01	7.6E+01	NP	2.0E+02		7.6E+01	UG_L	95% KM-t	1, 2, 3

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. ProUCL, Version 4.1. Prepared by Lockheed Martin Environmental Services).

Statistics: 95% Modified-t UCL (95% Mod-t); 95% Chebyshev (mean, std) UCL (95% Cheb-m); 95% Kaplan-Meier Chebyshev (95% KM-Cheb); 95% Kaplan-Meier (BCA) UCL (95% 95% Kaplan-Meier (bootstrap) UCL (95% KM-b); 95% Kaplan-Meier (KM) (t) UCL (95% KM-t); Approximate Gamma UCL (G-App); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.3.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Water Vapors at Showerhead	Chloroform	UG_L	2.9E+00	5.7E+00	G	3.7E+00	J	3.7E+00	UG_L	Max	3, 5
	Tetrachloroethene	UG_L	5.3E+00	5.8E+00	N	7.4E+00	J	5.8E+00	UG_L	95% Mod-t	4
	Trichloroethene	UG_L	4.7E+00	5.2E+00	N	2.0E+00	J	2.0E+00	UG_L	Max	4, 5
	Vinyl chloride	UG_L	4.6E+00	5.3E+00	NP	1.2E+00	J	1.2E+00	UG_L	Max	4, 5

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. ProUCL, Version 4.1. Prepared by Lockheed Martin Environmental Services).
Statistics: 95% Modified-t UCL (95% Mod-t); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.4.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, VA

Scenario Timeframe:Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Shallow Aquifer - Indoor Air (Residents)	Tetrachloroethene	NA	NA	NA	NA	2.0E-01	ug/m^3	Max	(1)

(1) Indoor air concentrations calculated using Johnson and Ettinger model. See output from Johnson and Ettinger model in Table 11.3.

Max = Maximum concentration
UG/M^3 = micrograms per cubic meter
NA = Not applicable

Table 3.5.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Water in Excavation Pit	Chloroform	UG_L	2.9E+00	5.7E+00	G	3.7E+00	J	3.7E+00	UG_L	Max	3, 5
	Tetrachloroethene	UG_L	5.3E+00	5.8E+00	N	7.4E+00	J	5.8E+00	UG_L	95% Mod-t	4
	Trichloroethene	UG_L	4.7E+00	5.2E+00	N	2.0E+00	J	2.0E+00	UG_L	Max	4, 5
	Vinyl chloride	UG_L	4.6E+00	5.3E+00	NP	1.2E+00	J	1.2E+00	UG_L	Max	4, 5
	bis(2-Ethylhexyl)phthalate	UG_L	1.5E+01	5.9E+01	NP	9.6E+01		5.9E+01	UG_L	95% Cheb-m	4
	2,4,6-Trinitrotoluene	UG_L	6.5E+00	7.6E+01	NP	5.5E+01		5.5E+01	UG_L	Max	1, 5
	2-Amino-4,6-dinitrotoluene	UG_L	8.9E+00	1.0E+02	NP	7.3E+01		7.3E+01	UG_L	Max	1, 5
	3,5-Dinitroaniline	UG_L	8.8E-01	4.5E+00	NP	4.4E+00	J	4.4E+00	UG_L	Max	4, 5
	4-Amino-2,6-dinitrotoluene	UG_L	9.9E+00	1.1E+02	NP	8.2E+01		8.2E+01	UG_L	Max	1, 5
	RDX	UG_L	3.6E+01	1.0E+02	NP	3.0E+02		1.0E+02	UG_L	95% KM-BCA	1, 3
	Antimony	UG_L	2.7E+01	4.0E+01	NP	2.0E+00	J	2.0E+00	UG_L	Max	4, 5
	Arsenic	UG_L	6.3E+00	8.1E+00	NP	1.2E+01		8.1E+00	UG_L	95% KM-t	1, 2, 3
	Chromium	UG_L	1.0E+01	3.1E+01	NP	4.7E+01		3.1E+01	UG_L	95% KM-Cheb	1, 3
	Cobalt	UG_L	1.4E+00	1.6E+00	NP	1.6E+00	J	1.6E+00	UG_L	95% KM-t	1, 2
	Iron	UG_L	2.4E+03	5.2E+03	G	6.2E+03		5.2E+03	UG_L	G-App	1, 3
	Manganese	UG_L	4.3E+01	1.1E+02	G	2.1E+02		1.1E+02	UG_L	G-App	1, 3
	Vanadium	UG_L	6.6E+00	1.1E+01	NP	2.1E+01	J	1.1E+01	UG_L	95% KM-t	1, 2, 3

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. ProUCL, Version 4.1. Prepared by Lockheed Martin Environmental Services).

Statistics: 95% Modified-t UCL (95% Mod-t); 95% Chebyshev (mean, std) UCL (95% Cheb-m); 95% Kaplan-Meier Chebyshev (95% KM-Cheb); 95% Kaplan-Meier (BCA) UCL (95% 95% Kaplan-Meier (bootstrap) UCL (95% KM-b); 95% Kaplan-Meier (KM) (t) UCL (95% KM-t); Approximate Gamma UCL (G-App); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.6.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Water in Excavation Pit	Chloroform	UG_L	2.9E+00	5.7E+00	G	3.7E+00	J	3.7E+00	UG_L	Max	3, 5
	Tetrachloroethene	UG_L	5.3E+00	5.8E+00	N	7.4E+00	J	5.8E+00	UG_L	95% Mod-t	4
	Trichloroethene	UG_L	4.7E+00	5.2E+00	N	2.0E+00	J	2.0E+00	UG_L	Max	4, 5
	Vinyl chloride	UG_L	4.6E+00	5.3E+00	NP	1.2E+00	J	1.2E+00	UG_L	Max	4, 5

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. ProUCL, Version 4.1. Prepared by Lockheed Martin Environmental Services).
Statistics: 95% Modified-t UCL (95% Mod-t); 95% Chebyshev (mean, std) UCL (95% Cheb-m); 95% Kaplan-Meier Chebyshev (95% KM-Cheb); 95% Kaplan-Meier (BCA) UCL (95%
95% Kaplan-Meier (bootstrap) UCL (95% KM-b); 95% Kaplan-Meier (KM) (t) UCL (95% KM-t); Approximate Gamma UCL (G-App); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.1.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Shallow Aquifer - Indoor Air (Industrial Worker)	Tetrachloroethene	NA	NA	NA	NA	4.7E-02	ug/m^3	Max	(1)

(1) Indoor air concentrations calculated using Johnson and Ettinger model. See output from Johnson and Ettinger model in Table 11.2.

Max = Maximum concentration
UG/M^3 = micrograms per cubic meter
NA = Not applicable

Table 3.2.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Tap Water											
	Chloroform	UG_L	2.9E+00	5.7E+00	G	3.7E+00	J	2.9E+00	UG_L	Mean-N	3, 5
	Tetrachloroethene	UG_L	5.3E+00	5.8E+00	NP	7.4E+00	J	5.3E+00	UG_L	Mean-N	4
	Trichloroethene	UG_L	4.7E+00	5.2E+00	N	2.0E+00	J	2.0E+00	UG_L	Max	4, 5
	Vinyl chloride	UG_L	4.6E+00	5.3E+00	N	1.2E+00	J	1.2E+00	UG_L	Max	4, 5
	bis(2-Ethylhexyl)phthalate	UG_L	1.5E+01	5.9E+01	NP	9.6E+01		1.5E+01	UG_L	Mean-N	4
	2,4,6-Trinitrotoluene	UG_L	6.5E+00	7.6E+01	NP	5.5E+01		6.5E+00	UG_L	Mean-KM	1, 5
	2-Amino-4,6-dinitrotoluene	UG_L	8.9E+00	1.0E+02	NP	7.3E+01		8.9E+00	UG_L	Mean-KM	1, 5
	3,5-Dinitroaniline	UG_L	8.8E-01	4.5E+00	NP	4.4E+00	J	8.8E-01	UG_L	Mean-KM	4, 5
	4-Amino-2,6-dinitrotoluene	UG_L	9.9E+00	1.1E+02	NP	8.2E+01		9.9E+00	UG_L	Mean-KM	1, 5
	RDX	UG_L	3.6E+01	1.0E+02	NP	3.0E+02		3.6E+01	UG_L	Mean-KM	1, 3
	Antimony-dissolved	UG_L	2.7E+01	4.0E+01	NP	2.0E+00	J	2.0E+00	UG_L	Max	4, 5
	Chromium-dissolved	UG_L	5.5E+00	3.2E+01	NP	3.1E+01		5.5E+00	UG_L	Mean-KM	4, 5
	Manganese-dissolved	UG_L	3.2E+01	7.6E+01	NP	2.0E+02		3.2E+01	UG_L	Mean-KM	1, 2, 3

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. ProUCL, Version 4.1. Prepared by Lockheed Martin Environmental Services).

Statistics: Maximum Detected Value (Max); Normal Mean (Mean-N); Kaplan-Meier Mean (Mean-KM)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because mean greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.3.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Water Vapors at Showerhead	Chloroform	UG_L	2.9E+00	5.7E+00	G	3.7E+00	J	2.9E+00	UG_L	Mean-N	3, 5
	Tetrachloroethene	UG_L	5.3E+00	5.8E+00	N	7.4E+00	J	5.3E+00	UG_L	Mean-N	4
	Trichloroethene	UG_L	4.7E+00	5.2E+00	N	2.0E+00	J	2.0E+00	UG_L	Max	4, 5
	Vinyl chloride	UG_L	4.6E+00	5.3E+00	NP	1.2E+00	J	1.2E+00	UG_L	Max	4, 5

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. ProUCL, Version 4.1. Prepared by Lockheed Martin Environmental Services).
Statistics: Maximum Detected Value (Max); Normal Mean (Mean-N); Kaplan-Meier Mean (Mean-KM)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because mean greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.4.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8, NWS Yorktown, Yorktown, VA

Scenario Timeframe:Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Shallow Aquifer - Indoor Air (Residents)	Tetrachloroethene	NA	NA	NA	NA	2.0E-01	ug/m^3	Max	(1)

(1) Indoor air concentrations calculated using Johnson and Ettinger model. See output from Johnson and Ettinger model in Table 11.3.

Max = Maximum concentration
UG/M^3 = micrograms per cubic meter
NA = Not applicable

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Industrial Worker	Adult	Indoor Air	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.1.RME	mg/m^3	See Table 3.1.RME	CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	8	hr/day	(1)	
				EF	Exposure Frequency	250	days/year	EPA, 1991	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration	25	years	EPA, 1991	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	EPA, 1989	

Notes:
(1) Assumed that worker would be present 8 hrs per day.

Sources:
EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-W	Ingestion Rate of Water	2	liters/day	EPA, 1997	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	24	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Child	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) =
				IR-W	Ingestion Rate of Water	1	liters/day	EPA, 1997	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	6	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
		Child/Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) =
				IR-W-A	Ingestion Rate of Water, Adult	2	liters/day	EPA, 1997	CW x IR-W-Adj x EF x CF2 x 1/AT
				IR-W-C	Ingestion Rate of Water, Child	1	liters/day	EPA, 1997	
				IR-W-Adj	Ingestion Rate of Water, Age-adjusted	1.09	liter-year/kg-day	calculated	IR-W-Adj (liter-year/kd-day) =
				EF	Exposure Frequency	350	days/year	EPA, 1991	(ED-C x IR-W-C / BW-C) +
				ED-A	Exposure Duration, Adult	24	years	EPA, 1991	(ED-A x IR-W-A / BW-A)
				ED-C	Exposure Duration, Child	6	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW-A	Body Weight , Adult	70	kg	EPA, 1991	
				BW-C	Body Weight, Child	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	0.58	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	18,000	cm^2	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	350	days/year	EPA, 2004	
				ED	Exposure Duration	24	years	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
		Child	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	1.0	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	6,600	cm^2	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	350	days/year	EPA, 2004	
				ED	Exposure Duration	6	years	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	15	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Child/Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) = DA-Adj x EF x 1/AT
				DAevent-A	Dermally Absorbed Dose per Event, Adult	calculated	mg/cm^2-event	calculated	
				DAevent-C	Dermally Absorbed Dose per Event, Child	calculated	mg/cm^2-event	calculated	DA-Adj = (Daevent-A x SA-A x ED-A x 1/BW-A)
				DA-Adj	Dermally Absorbed Dose, Age-adjusted	calculated	mg-year/event-kg	calculated	+ (Daevent-C x SA-C x ED-C x 1/BW-C)
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}-A	Event Time, Adult	0.58	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				t_{event}-C	Event Time, Child	1.0	hr/event	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				SA-A	Skin Surface Area, Adult	18,000	cm^2	EPA, 2004	x CF2 x CF3
				SA-C	Skin Surface Area, Child	6,600	cm^2	EPA, 2004	
				EV	Event Frequency	1	events/day	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				EF	Exposure Frequency	350	days/year	EPA, 2004	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				ED-A	Exposure Duration, Adult	24	years	EPA, 2004	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				ED-C	Exposure Duration, Child	6	years	EPA, 2004	
				BW-A	Body Weight, Adult	70	kg	EPA, 1991	
				BW-C	Body Weight, Child	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
	Construction Worker	Adult	Water in Excavation Pit	CW	Chemical Concentration in Water	See Table 3.5.RME	µg/l	See Table 3.5.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	8	hr/day	(1)	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	EPA, 2004, (3)	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	125	days/year	(2)	
				ED	Exposure Duration	1	years	EPA, 1991	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

TABLE 4.2.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name

(1) Professional judgment based on construction activities that would occur 8 hrs per day for the RME.

(2) Assumed contact with groundwater during construction project would be 125 days/year.

(3) Skin surface area in contact with groundwater assumed to be hands, forearms, lower legs, and feet.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.

EPA, 2004 . Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment (Final). EPA/540/R/99/005. July 2004.

TABLE 4.3.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
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	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.RME	µg/l	See Table 3.3.RME	Chronic Daily Intake (CDI) (mg/kg-day) =
				CAa	Chemical Concentration in Air	Calculated	mg/m^3	Calculated	CAa x ETa x EDa x EF x CF1 x 1/AT
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				EDa	Exposure Duration	24	years	EPA, 1991	Use Foster & Chrostowski Shower model to
				ETa	Exposure Time	0.58	hr/day	EPA, 2004	calculate Ca-a and Ca-c
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.4.RME	mg/m^3	See Table 3.4.RME	CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	24	years	EPA, 1991	CA calculated using Johnson and Ettinger model
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Child	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.RME	µg/l	See Table 3.3.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CAc	Chemical Concentration in Air	Calculated	mg/m^3	Calculated	CA_c x ET_c x ED_c x EF x CF1 x 1/AT
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				EDc	Exposure Duration	6	years	EPA, 1991	Use Foster & Chrostowski Shower model to
				ETc	Exposure Time	1	hr/day	EPA, 2004	calculate Ca-a and Ca-c
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.4.RME	mg/m^3	See Table 3.4.RME	CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	6	years	EPA, 1991	CA calculated using Johnson and Ettinger model
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	

TABLE 4.3.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
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/Adult	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.2	µg/l	See Table 3.2	Chronic Daily Intake (CDI) (mg/m3) =
				Ca-a	Air Concentration for shower, Adult	Calculated	mg/m^3	Calculated	(CAc x ETc x EDc + CAa x ETa x EDa) x EF x CF1 x 1/AT
				Ca-c	Air Concentration for shower, child	Calculated	mg/m^3	Calculated	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				EDa	Exposure Duration, Adult	24	years	EPA, 1991	Use Foster & Chrostowski Shower model to
				EDc	Exposure Duration, Child	6	years	EPA, 1991	calculate Ca-a and Ca-c
				ETa	Exposure Time	0.58	hr/day	EPA, 2004	
				ETc	Exposure Time	1	hr/day	EPA, 2004	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.1	µg/l	See Table 3.1	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.2	mg/m^3	See Table 3.2	CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration, Resident	30	years	EPA, 1991	CA calculated using Johnson and Ettinger model
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
	Construction Worker	Adult	Water Vapors at Excavation Pit	CW	Chemical Concentration in Water	See Table 3.6.RME	µg/l	See Table 3.6.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	calculated	mg/m^3		CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	8	hr/day	(1)	
				EF	Exposure Frequency	125	days/year	(2)	
				ED	Exposure Duration	1	years	EPA, 1991	CA calculated using Virginia Voluntary Remediation
				CF1	Conversion Factor 1	1/24	day/hour	- -	Program Method
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	

Notes:

(1) Assumed that worker would be present 8 hrs per day.

(2) Assumed contact with groundwater during construction project would be 125 days/year.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.

EPA, 2004 . Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment (Final). EPA/540/R/99/005. July 2004.

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURE
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Industrial Worker	Adult	Indoor Air	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.1.CTE	mg/m^3	See Table 3.1.CTE	CA x ET x ED x EF x CF1 x 1/AT
				ET	Exposure Time	8	hr/day	(1)	
				EF	Exposure Frequency	219	days/year	EPA, 2004	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration	9	years	EPA, 2004	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	EPA, 1989	

Notes:
(1) Assumed that worker would be present 8 hrs per day.

Sources:
EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

TABLE 4.2.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURE
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-W	Ingestion Rate of Water	1.4	liters/day	EPA, 1993	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				ED	Exposure Duration	9	years	EPA, 1993	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
		Child	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) =
				IR-W	Ingestion Rate of Water	1	liters/day	EPA, 1997	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				ED	Exposure Duration	6	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
		Child/Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) =
				IR-W-A	Ingestion Rate of Water, Adult	1.4	liters/day	EPA, 1993	CW x IR-W-Adj x EF x CF2 x 1/AT
				IR-W-C	Ingestion Rate of Water, Child	1	liters/day	EPA, 1997	
				IR-W-Adj	Ingestion Rate of Water, Age-adjusted	0.58	liter-year/kg-day	calculated	IR-W-Adj (liter-year/kd-day) =
				EF	Exposure Frequency	234	days/year	EPA, 1993	(ED-C x IR-W-C / BW-C) +
				ED-A	Exposure Duration, Adult	9	years	EPA, 1993	(ED-A x IR-W-A / BW-A)
				ED-C	Exposure Duration, Child	6	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW-A	Body Weight , Adult	70	kg	EPA, 1991	
				BW-C	Body Weight, Child	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	

TABLE 4.2.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	Calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	Chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	Chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	Chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	Chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	Chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	0.25	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	18,000	cm^2	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				ED	Exposure Duration	9	years	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
		Child	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	Calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	Chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	Chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	Chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	Chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	Chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	0.33	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	6,600	cm^2	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				ED	Exposure Duration	6	years	EPA, 2001	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	15	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

TABLE 4.2.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Child/Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) = DA-Adj x EF x 1/AT
				DAevent-A	Dermally Absorbed Dose per Event, Adult	Calculated	mg/cm^2-event	calculated	
				DAevent-C	Dermally Absorbed Dose per Event, Child	Calculated	mg/cm^2-event	calculated	DA-Adj = (Daevent-A x SA-A x ED-A x 1/BW-A)
				DA-Adj	Dermally Absorbed Dose, Age-adjusted	Calculated	mg-year/event-kg	calculated	+ (Daevent-C x SA-C x ED-C x 1/BW-C)
				FA	Fraction absorbed water	Chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	Chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	Chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	Chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	Chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}-A	Event Time, Adult	0.25	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				t_{event}-C	Event Time, Child	0.33	hr/event	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				SA-A	Skin Surface Area, Adult	18,000	cm^2	EPA, 2004	x CF2 x CF3
				SA-C	Skin Surface Area, Child	6,600	cm^2	EPA, 2004	
				EV	Event Frequency	1	events/day	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				EF	Exposure Frequency	234	days/year	EPA, 1993	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				ED-A	Exposure Duration, Adult	9	years	EPA, 2001	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				ED-C	Exposure Duration, Child	6	years	EPA, 2001	
				BW-A	Body Weight, Adult	70	kg	EPA, 1991	
				BW-C	Body Weight, Child	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
	Construction Worker	Adult	Water in Excavation Pit	CW	Chemical Concentration in Water	See Table 3.5.CTE	µg/l	See Table 3.5.CTE	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	Calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	Chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	Chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	Chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	Chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	Chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	4	hr/day	(1)	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	EPA, 2004, (3)	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	125	days/year	(2)	
				ED	Exposure Duration	1	years	EPA, 1991	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

(1) Professional judgment assuming 1/2 RME value for CT.

TABLE 4.2.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name

(2) Assumed duration of construction project may be 1/2 a year.

(3) Skin surface area in contact with groundwater assumed to be hands, forearms, lower legs, and feet.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 1993: Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.

EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.

EPA, 2004 . Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment (Final). EPA/540/R/99/005. July 2004.

TABLE 4.3.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY
Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
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	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/kg-day) =
				CAa	Chemical Concentration in Air	Calculated	mg/m^3	Calculated	CAa x ETa x EDa x EF x CF1 x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				EDa	Exposure Duration	9	years	EPA, 1993	Use Foster & Chrostowski Shower model to
				ETa	Exposure Time	0.25	hr/day	EPA, 2004	calculate Ca-a and Ca-c
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.4.CTE	mg/m^3	See Table 3.4.CTE	CA x ET x ED x EF x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	234	days/year	EPA, 1993	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration	9	years	EPA, 1993	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Child	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CAc	Chemical Concentration in Air	Calculated	mg/m^3	Calculated	CA_c x ET_c x ED_c x EF x CF1 x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				EDc	Exposure Duration	6	years	EPA, 1991	Use Foster & Chrostowski Shower model to
				ETc	Exposure Time	0.33	hr/day	EPA, 2004	calculate Ca-a and Ca-c
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.4.CTE	mg/m^3	See Table 3.4.CTE	CA x ET x ED x EF x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	234	days/year	EPA, 1993	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration	6	years	EPA, 1991	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	

TABLE 4.3.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
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/Adult	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				Ca-a	Air Concentration for shower, Adult	Calculated	mg/m^3	Calculated	(CAc x ETc x EDc + CAa x ETa x EDa)
				Ca-c	Air Concentration for shower, child	Calculated	mg/m^3	Calculated	x EF x CF1 x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				EDa	Exposure Duration, Adult	9	years	EPA, 1993	Use Foster & Chrostowski Shower model to
				EDc	Exposure Duration, Child	6	years	EPA, 1991	calculate Ca-a and Ca-c
				ETa	Exposure Time	0.25	hr/day	EPA, 2004	
				ETc	Exposure Time	0.33	hr/day	EPA, 2004	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.1	µg/l	See Table 3.1	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.2	mg/m^3	See Table 3.2	CA x ET x ED x EF x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	234	days/year	EPA, 1993	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration, Resident	15	years	EPA, 1993	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
	Construction Worker	Adult	Water Vapors at Excavation Pit	CW	Chemical Concentration in Water	See Table 3.6.CTE	µg/l	See Table 3.6.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	calculated	mg/m^3		CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	4	hr/day	(1)	
				EF	Exposure Frequency	125	days/year	(2)	
				ED	Exposure Duration	1	years	EPA, 1991	CA calculated using Virginia Voluntary Remediation
				CF1	Conversion Factor 1	1/24	day/hour	- -	Program Method
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	

Notes:

(1) Professional judgment assuming 1/2 RME value for CT.

(2) Assumed contact with groundwater during construction project would be 125 days/year.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 1993: Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.

EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.

EPA, 2001: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

EPA, 2004 . Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment (Final). EPA/540/R/99/005. July 2004.

TABLE 5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Site 8, NWS Yorktown, Yorktown, VA

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (MM/DD/YY)
Chloroform	Chronic	1.0E-02	mg/kg-day	Generally > 50%	1.0E-02	mg/kg-day	Liver	100/1	IRIS	2/1/2010
	Subchronic	1.0E-02	mg/kg-day	Generally > 50%	1.0E-02	mg/kg-day	Liver	1000	HEAST	7/1/1997
Tetrachloroethene	Chronic	1.0E-02	mg/kg-day	Generally > 50%	1.0E-02	mg/kg-day	Liver, Body Weight	100/1	IRIS	2/1/2010
	Subchronic	1.0E-01	mg/kg-day	Generally > 50%	1.0E-01	mg/kg-day	Liver	100	HEAST	7/1/1997
Trichloroethene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl chloride	Chronic	3.0E-03	mg/kg-day	generally > 50%	3.0E-03	mg/kg-day	Liver	30/1	IRIS	2/1/2010
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
bis(2-Ethylhexyl)phthalate	Chronic	2.0E-02	mg/kg-day	Generally > 50%	2.0E-02	mg/kg-day	Liver	1000/1	IRIS	2/1/2010
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4,6-Trinitrotoluene	Chronic	5.0E-04	mg/kg-day	Generally > 50%	5.0E-04	mg/kg-day	Liver	1000/1	IRIS	2/1/2010
	Subchronic	5.0E-04	mg/kg-day	Generally > 50%	5.0E-04	mg/kg-day	Liver	1000/1	HEAST	7/1/1997
2-Amino-4,6-dinitrotoluene	Chronic	2.0E-03	mg/kg-day	Generally > 50%	2.0E-03	mg/kg-day	Central Nervous System, Blood, Biliary Tract	100/1	IRIS	2/1/2010
	Subchronic	2.0E-03	mg/kg-day	Generally > 50%	2.0E-03	mg/kg-day	Central Nervous System, Blood, Biliary Tract	100	HEAST	7/1/1997
3,5-Dinitroaniline	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic									
4-Amino-2,6-dinitrotoluene	Chronic	2.0E-03	mg/kg-day	Generally > 50%	2.0E-03	mg/kg-day	Central Nervous System, Blood, Biliary Tract	100/1	IRIS	2/1/2010
	Subchronic	2.0E-03	mg/kg-day	Generally > 50%	2.0E-03	mg/kg-day	Central Nervous System, Blood, Biliary Tract	100	HEAST	7/1/1997
RDX	Chronic	3.0E-03	mg/kg-day	generally > 50%	3.0E-03	mg/kg-day	Prostate	100/1	IRIS	2/1/2010
	Subchronic	3.0E-03	mg/kg-day	generally > 50%	3.0E-03	mg/kg-day	Prostate	100/1	HEAST	7/1/1997
Antimony	Chronic	4.0E-04	mg/kg-day	15%	6.0E-05	mg/kg-day	Longevity, Blood	1000/1	IRIS	2/10/2009
	Subchronic	4.0E-04	mg/kg-day	15%	6.0E-05	mg/kg-day	Longevity, Blood	1000/1	PPRTV	7/29/2008
Arsenic	Chronic	3.0E-04	mg/kg-day	95%	3.0E-04	mg/kg-day	Skin, Vascular	3/1	IRIS	2/01/2010
	Subchronic	3.0E-04	mg/kg-day	95%	3.0E-04	mg/kg-day	Skin, Vascular	3	HEAST	7/01/1997
Chromium	Chronic	3.0E-03	mg/kg-day	2.5%	7.5E-05	mg/kg-day	Not identified	300/3	IRIS	2/01/2010
	Subchronic	2.0E-02	mg/kg-day	2.5%	5.0E-04	mg/kg-day	Not identified	100	HEAST	7/01/1997
Cobalt	Chronic	3.0E-04	mg/kg-day	N/A	3.0E-04	mg/kg/day	Thyroid	1000	PPRTV	08/25/08
	Subchronic	3.0E-03	mg/kg-day	N/A	3.0E-03	mg/kg/day	Thyroid	300	PPRTV	08/25/08
Iron	Chronic	7.0E-01	mg/kg/day	NA	7.0E-01	mg/kg/day	Gastrointestinal	1	PPRTV	7/29/2005
	Subchronic	7.0E-01	mg/kg/day	NA	7.0E-01	mg/kg/day	Gastrointestinal	1	PPRTV	7/29/2005
Manganese	Chronic	1.4E-01	mg/kg-day	4%	5.6E-03	mg/kg-day	Central Nervous System	1/1	IRIS	2/1/2010
	Subchronic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	Chronic	5.0E-03	mg/kg-day	2.6%	1.3E-04	mg/kg-day	Kidney	300	RSL	02/01/10
	Subchronic	7.0E-03	mg/kg-day	2.6%	1.8E-04	mg/kg-day	Lifetime	100	HEAST	07/01/97

(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health Evalution Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Final. Section 4.2 and Exhibit 4-1. USEPA recommends that the oral RfD should not be adjusted to estimate the absorbed dose for compounds when the absorption efficiency is greater than 50%. Constituents that do not have oral absorption efficiencies reported on this table were assumed to have an oral absorption efficiency of 100%.

(2) Provide equation for derivation in text.

(3) For IRIS values, provide the date IRIS was searched.
For HEAST values, provide the date of HEAST.
For PPRTV values, provide the date of the article provided by NCEA.

1,3-Dinitrobenzene used as a surrogate for 3,5-dinitrotoluene.

Definitions: IRIS = Integrated Risk Information System
HEAST= Health Effects Assessment Summary Tables
PPRTV = Provisional Peer-Reviewed Toxicity Values
N/A = Not Applicable or Not Available.

TABLE 5.2

NON-CANCER TOXICITY DATA -- INHALATION

Site 8, NWS Yorktown, Yorktown, VA

Chemical of Potential Concern	Chronic/ Subchronic	Value Inhalation RfC	Units	Adjusted Inhalation RfD (1)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfC:RfD: Target Organ	Dates (2) (MM/DD/YY)
Chloroform	Chronic	9.8E-02	mg/m^3	2.8E-02	mg/kg-day	Liver		ASTDR	09/1997
	Subchronic								
Tetrachloroethene	Chronic	2.7E-01	mg/m^3	7.7E-02	mg/kg-day	Neurological		ASTDR	09/1997
	Subchronic								
Trichloroethene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl chloride	Chronic	1.0E-01	mg/m^3	2.9E-02	mg/kg-day	Liver	30/1	IRIS	2/1/2010
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
bis(2-Ethylhexyl)phthalate	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4,6-Trinitrotoluene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Amino-4,6-dinitrotoluene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3,5-Dinitroaniline	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4-Amino-2,6-dinitrotoluene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RDX	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Antimony	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	Chronic	1.5E-05	mg/m^3	4.3E-06	mg/kg-day	Developmental, Cardiovascular, Nervous System	3/1	Cal EPA	2/01/2010
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium	Chronic	1.0E-04	mg/m3	2.9E-05	mg/kg-day	Respiratory System	300/1	IRIS	2/1/2010
	Subchronic	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	Chronic	6.0E-06	mg/m3	1.7E-06	mg/kg-day	Respiratory System	300	PPRTV	08/25/08
	Subchronic	NA	NA	NA	NA	NA	NA	NA	NA
Iron	Chronic	NA	NA	NA	NA	NA	NA	NA	NA
	Subchronic	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	Chronic	5.0E-05	mg/m3	1.4E-05	mg/kg-day	Central Nervous System	1000/1	IRIS	2/1/2010
	Subchronic	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	Chronic	NA	NA	NA	NA	NA	NA	NA	NA
	Subchronic	NA	NA	NA	NA	NA	NA	NA	NA

(1) Provide equation used for derivation in text.

(2) For IRIS values, provide the date IRIS was searched.
For PPRTV values, provide the date of the article/toxicity profile from PPTRV.
For Cal-EPA values, provide the date Cal-EPA database was searched.
For HEAST values, provide the date of HEAST.

Definitions: IRIS = Integrated Risk Information System
PPRTV = Provisional Peer-Reviewed Toxicity Values
Cal-EPA = California EPA
HEAST= Health Effects Assessment Summary Tables
N/A = Not Applicable

TABLE 6.1

CANCER TOXICITY DATA -- ORAL/DERMAL

Site 8, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (1)	Units	EPA Carcinogen Group	Source	Date (2) (MM/DD/YY)
Chloroform	3.1E-02	Generally > 50%	3.1E-02	$(mg/kg\text{-}day)^{-1}$	B2	CalEPA	2/1/2010
Tetrachloroethene	5.4E-01	Generally > 50%	5.4E-01	$(mg/kg\text{-}day)^{-1}$	2B	CalEPA	2/1/2010
Trichloroethene	5.9E-03	Generally > 50%	5.9E-03	$(mg/kg\text{-}day)^{-1}$	2A	CalEPA	2/1/2010
Vinyl chloride	7.2E-01	Generally > 50%	7.2E-01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	2/1/2010
bis(2-Ethylhexyl)phthalate	1.4E-02	Generally > 50%	1.4E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	2/1/2010
2,4,6-Trinitrotoluene	3.0E-02	Generally > 50%	3.0E-02	$(mg/kg\text{-}day)^{-1}$	C	IRIS	2/1/2010
2-Amino-4,6-dinitrotoluene	N/A		N/A				
3,5-Dinitroaniline	N/A		N/A				
4-Amino-2,6-dinitrotoluene	N/A		N/A				
RDX	1.1E-01	Generally > 50%	1.1E-01	$(mg/kg\text{-}day)^{-1}$	C	IRIS	2/1/2010
Antimony	N/A		N/A				
Arsenic	1.5E+00	95%	1.5E+00	$(mg/kg\text{-}day)^{-1}$	A	IRIS	2/1/2010
Chromium	5.0E-01	2.5%	5.0E-01	$(mg/kg\text{-}day)^{-1}$	D	New Jersey	2/1/2010
Cobalt	N/A		N/A				
Iron	N/A		N/A				
Manganese	N/A		N/A				
Vanadium	N/A		N/A				

CalEPA = California EPA

New Jersey = New Jersey EPA

HEAST= Health Effects Assessment Summary Tables

IRIS = Integrated Risk Information System

NCEA = National Center for Environmental Assessment

N/A = Not available

(1) Refer to RAGS, Part E. July 2004.

(2) For IRIS values, provide the date IRIS was searched.
For HEAST values, provide the date of HEAST.
For NCEA values, provide article date provided by NCEA.

EPA Carcinogen Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

2A - Probable human carcinogen

2B - Possible human carcinogen

TABLE 6.2

CANCER TOXICITY DATA -- INHALATION

Site 8, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Unit Risk	Units	Adjustment (1)	Inhalation Cancer Slope Factor	Units	Weight of Evidence/ Cancer Guidance Description	Source	Date (2) (MM/DD/YY)
Chloroform	2.3E-05	$(ug/m3)^{-1}$	3500	8.1E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	2/1/2010
Tetrachloroethene	5.9E-06	$(ug/m3)^{-1}$	3500	2.1E-02	$(mg/kg\text{-}day)^{-1}$	2B	CalEPA	2/1/2010
Trichloroethene	2.0E-06	$(ug/m3)^{-1}$	3500	7.0E-03	$(mg/kg\text{-}day)^{-1}$	2A	CalEPA	2/1/2010
Vinyl chloride	4.4E-06	$(ug/m3)^{-1}$	3500	1.5E-02	$(mg/kg\text{-}day)^{-1}$	A	IRIS	2/1/2010
bis(2-Ethylhexyl)phthalate	2.4E-06	$(ug/m3)^{-1}$	3500	8.4E-03	$(mg/kg\text{-}day)^{-1}$	2A	CalEPA	2/1/2010
2,4,6-Trinitrotoluene	N/A			N/A				
2-Amino-4,6-dinitrotoluene	N/A			N/A				
3,5-Dinitroaniline	N/A			N/A				
4-Amino-2,6-dinitrotoluene	N/A			N/A				
RDX	N/A			N/A				
Antimony	N/A			N/A				
Arsenic	4.3E-03	$(ug/m3)^{-1}$	3500	1.5E+01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	2/1/2010
Chromium	8.4E-02	$(ug/m3)^{-1}$	3500	2.9E+02	$(mg/kg\text{-}day)^{-1}$	A	IRIS	2/1/2010
Cobalt	9.0E-03	$(ug/m3)^{-1}$	3500	3.2E+01	$(mg/kg\text{-}day)^{-1}$	B1	PPRTV	8/25/2008
Iron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

CalEPA = California EPA

IRIS = Integrated Risk Information System

NCEA = National Center for Environmental Assessment

N/A = Not Available

(1) Adjustment Factor applied to Unit Risk to calculate Inhalation Slope Factor = 70kg x 1/20m3/day x 1000ug/mg

(2) For IRIS values, provide the date IRIS was searched.
For HEAST values, provide the date of HEAST.
For NCEA values, provide the date of the article provided by NCEA.
For CalEPA values, provide the date CalEPA was searched.

EPA Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

2A - Probable human carcinogen

2B - Possible human carcinogen

TABLE 7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Receptor Population: Industrial Worker
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	
Groundwater	Air	Indoor Air	Inhalation	Tetrachloroethene	4.7E-05	mg/m^3	3.8E-06	mg/m^3	5.9E-06	(ug/m3)$^{-1}$	2.2E-08	1.1E-05	mg/m^3	2.7E-01	mg/m^3	4.0E-05
			Exp. Route Total								2.2E-08					4.0E-05
		Exposure Point Total									2.2E-08					4.0E-05
	Exposure Medium Total										2.2E-08					4.0E-05
Groundwater Total											2.2E-08					4.0E-05
										Total of Receptor Risks Across All Media	2.2E-08				Total of Receptor Hazards Across All Media	4.0E-05

Notes-
NA = Not applicable.

TABLE 7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Groundwater	Tap Water	Ingestion	Chloroform	3.7E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg/day	1.0E-02	mg/kg/day	1.0E-02
				Tetrachloroethene	5.8E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.6E-04	mg/kg/day	1.0E-02	mg/kg/day	1.6E-02
				Trichloroethene	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	5.5E-05	mg/kg/day	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.3E-05	mg/kg/day	3.0E-03	mg/kg/day	1.1E-02
				bis(2-Ethylhexyl)phthalate	5.9E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.6E-03	mg/kg/day	2.0E-02	mg/kg/day	8.1E-02
				2,4,6-Trinitrotoluene	5.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.5E-03	mg/kg/day	5.0E-04	mg/kg/day	3.0E+00
				2-Amino-4,6-dinitrotoluene	7.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.0E-03	mg/kg/day	2.0E-03	mg/kg/day	1.0E+00
				3,5-Dinitroaniline	4.4E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.2E-04	mg/kg/day	N/A		N/A
				4-Amino-2,6-dinitrotoluene	8.2E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.1E+00
				RDX	1.0E+02	ug/L	N/A	N/A	N/A	N/A	N/A	2.8E-03	mg/kg/day	3.0E-03	mg/kg/day	9.3E-01
				Antimony-dissolved	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	5.5E-05	mg/kg/day	4.0E-04	mg/kg/day	1.4E-01
				Chromium-dissolved	3.1E+01	ug/L	N/A	N/A	N/A	N/A	N/A	8.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.9E-01
				Manganese-dissolved	7.6E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.1E-03	mg/kg/day	1.4E-01	mg/kg/day	1.5E-02
			Exp. Route Total								N/A					6.6E+00
			Dermal Absorption	Chloroform	3.7E+00	ug/L	N/A	N/A	N/A	N/A	N/A	9.2E-06	mg/kg/day	1.0E-02	mg/kg/day	9.2E-04
				Tetrachloroethene	5.8E+00	ug/L	N/A	N/A	N/A	N/A	N/A	9.6E-05	mg/kg/day	1.0E-02	mg/kg/day	9.6E-03
				Trichloroethene	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	9.2E-06	mg/kg/day	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.7E-06	mg/kg/day	3.0E-03	mg/kg/day	5.8E-04
				bis(2-Ethylhexyl)phthalate	5.9E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.5E-03	mg/kg/day	2.0E-02	mg/kg/day	1.3E-01
				2,4,6-Trinitrotoluene	5.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	4.3E-05	mg/kg/day	5.0E-04	mg/kg/day	8.6E-02
				2-Amino-4,6-dinitrotoluene	7.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.1E-04	mg/kg/day	2.0E-03	mg/kg/day	5.3E-02
				3,5-Dinitroaniline	4.4E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.7E-06	mg/kg/day	N/A		N/A
				4-Amino-2,6-dinitrotoluene	8.2E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.2E-04	mg/kg/day	2.0E-03	mg/kg/day	5.9E-02
				RDX	1.0E+02	ug/L	N/A	N/A	N/A	N/A	N/A	2.5E-05	mg/kg/day	3.0E-03	mg/kg/day	8.4E-03
				Antimony-dissolved	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.9E-07	mg/kg/day	6.0E-05	mg/kg/day	4.8E-03
				Chromium-dissolved	3.1E+01	ug/L	N/A	N/A	N/A	N/A	N/A	9.0E-06	mg/kg/day	7.5E-05	mg/kg/day	1.2E-01
				Manganese-dissolved	7.6E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.1E-05	mg/kg/day	5.6E-03	mg/kg/day	2.0E-03
			Exp. Route Total								N/A					4.7E-01
		Exposure Point Total									N/A					7.1E+00
	Exposure Medium Total										N/A					7.1E+00

TABLE 7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
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	
	Air	Water Vapors at Showerhead	Inhalation	Chloroform	6.9E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.6E-04	mg/m^3	9.8E-02	mg/m^3	1.6E-03
				Tetrachloroethene	9.8E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.3E-04	mg/m^3	2.7E-01	mg/m^3	8.4E-04
				Trichloroethene	3.7E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	8.6E-05	mg/m^3	N/A		N/A
				Vinyl chloride	3.2E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	7.4E-05	mg/m^3	1.0E-01	mg/m^3	7.4E-04
			Exp. Route Total								N/A					3.2E-03
		Exposure Point Total									N/A					3.2E-03
		Indoor Air	Inhalation	Tetrachloroethene	2.0E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	6.7E-05	mg/m^3	2.7E-01	mg/m^3	2.5E-04
			Exp. Route Total								N/A					2.5E-04
		Exposure Point Total									N/A					2.5E-04
	Exposure Medium Total										N/A					3.5E-03
Medium Total											N/A					7.1E+00
							Total of Receptor Risks Across All Media				N/A	Total of Receptor Hazards Across All Media				7.1E+00

Notes-
N/A = Not applicable.
DAevent for exposure to groundwater while showering is calculated on Table 7.2.RME Supplement A.
Inhalation exposure for shower calculated on Table 7.2.RME Supplement C.

Table 7.2.RME Supplement A
Calculation of DAevent
Resident Adult Ground Water
Site 8, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Water Concentration (CW) (µg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Chloroform	3.7E+00	6.8E-03	2.9E-02	5.0E-01	1.2E+00	1.0E+00	0.58	3.7E-08	2
Tetrachloroethene	5.8E+00	3.3E-02	1.7E-01	9.1E-01	2.2E+00	1.0E+00	0.58	3.9E-07	2
Trichloroethene	2.0E+00	1.2E-02	1.0E-01	5.8E-01	1.4E+00	1.0E+00	0.58	3.7E-08	2
Vinyl chloride	1.2E+00	5.6E-03	1.7E-02	2.4E-01	5.7E-01	1.0E+00	0.58	7.1E-09	3
bis(2-Ethylhexyl)phthalate	5.9E+01	2.5E-02	2.0E-01	1.7E+01	4.0E+01	8.0E-01	0.58	1.0E-05	2
2,4,6-Trinitrotoluene[2]	5.5E+01	1.1E-03	6.2E-03	2.0E+00	4.7E+00	1.0E+00	0.58	1.7E-07	2
2-Amino-4,6-dinitrotoluene[2]	7.3E+01	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	0.58	4.3E-07	2
3,5-Dinitroaniline	4.4E+00	3.2E-03	1.7E-02	1.1E+00	2.7E+00	1.0E+00	0.58	3.1E-08	2
4-Amino-2,6-dinitrotoluene[2]	8.2E+01	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	0.58	4.8E-07	2
RDX[2]	1.0E+02	3.5E-04	3.5E-04	1.8E+00	4.4E+00	1.0E+00	0.58	1.0E-07	2
Antimony-dissolved	2.0E+00	1.0E-03	N/A	N/A	N/A	N/A	0.58	1.2E-09	1
Chromium-dissolved	3.1E+01	2.0E-03	N/A	N/A	N/A	N/A	0.58	3.6E-08	1
Manganese-dissolved	7.6E+01	1.0E-03	N/A	N/A	N/A	N/A	0.58	4.4E-08	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.2.RME Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.2.RME Supplement B
Calculation of DAevent
Site 8, NWS Yorktown, Yorktown, Virginia

Chemical	**MW**	**Kp (cm/hr)**	**B[1]**	**Dsc/lsc[1]**	**lsc (cm)**	**Dsc (cm^2/hr)**	**τ[1] (hr)**	**c[1]**	**b[1]**	**t*[1] (hr)**
2,4,6-Trinitrotoluene	227	1.1E-03	6.2E-03	8.5E-05	1.0E-03	8.5E-08	2.0E+00	3.4E-01	3.1E-01	4.7E+00
2-Amino-4,6-dinitrotoluene	197	2.4E-03	1.3E-02	1.2E-04	1.0E-03	1.2E-07	1.3E+00	3.4E-01	3.1E-01	3.2E+00
3,5-Dinitroaniline	183	3.2E-03	1.7E-02	1.5E-04	1.0E-03	1.5E-07	1.1E+00	3.4E-01	3.1E-01	2.7E+00
4-Amino-2,6-dinitrotoluene	197	2.4E-03	1.3E-02	1.2E-04	1.0E-03	1.2E-07	1.3E+00	3.4E-01	3.1E-01	3.2E+00
RDX	222.12	3.5E-04	2.0E-03	9.0E-05	1.0E-03	9.0E-08	1.8E+00	3.3E-01	3.0E-01	4.4E+00

1. Equations from *Dermal Exposure Assessment: Principles and Applications* . EPA/600/8-91/011B. January 1992.
Parameter values from RAIS database (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).

Table 7.2.RME Supplement C

Inhalation Exposure Concentrations from Foster and Chrostowski Shower Model

Adult Resident

Site 8, NWS Yorktown

Chemical of Potential Concern	Exposure Point Concentration Cwo (µg/L)	Molecular weight (MW) (g/mole)	Henry's Law Constant (H) (atm-m^3/mole)	Kg (VOC) (cm/hr)	Kl (VOC) (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd (µg/L)	S (µg/m^3 -min)	Ca (mg/m^3)
Chloroform	3.7E+00	1.2E+02	3.7E-03	1.2E+03	1.2E+01	1.1E+01	1.5E+01	4.4E-01	3.7E-01	6.9E-03
Tetrachloroethene	5.8E+00	1.7E+02	1.8E-02	9.9E+02	1.0E+01	1.0E+01	1.4E+01	6.3E-01	5.2E-01	9.8E-03
Trichloroethene	2.0E+00	1.3E+02	9.9E-03	1.1E+03	1.2E+01	1.1E+01	1.5E+01	2.4E-01	2.0E-01	3.7E-03
Vinyl chloride	1.2E+00	6.3E+01	2.8E-02	1.6E+03	1.7E+01	1.7E+01	2.2E+01	2.0E-01	1.7E-01	3.2E-03

Variables	Units	Exposure Assumptions
Kg(VOC) = gas-film mass transfer coefficient	cm/hr	Solved by Eq 1
Kl(VOC) = liquid-film mass transfer coefficient	cm/hr	Solved by Eq 2
KL = overall mass transfer coefficient	cm/hr	Solved by Eq 3
Kal = adjusted overall mass transfer coeff.	cm/hr	Solved by Eq 4
Tl = Calibration temp. of water	K (20C +273)	293
Ts = Shower water temperature	k (45C)	318
Us = water viscosity at Ts	centipoise	0.596
Ul = water viscosity at Tl	cp	1.002
Cwd = conc. leaving droplets after time sdt	µg/l	Solved by Eq 5
sdt = shower droplet drop time	sec	0.5
d = shower droplet diameter	mm	1
FR = shower water flow rate	l/min	10
SV = shower room air volume	m^3	12
S = indoor VOC generation rate	µg/m^3-min	Solved by Eq 6
VR = ventilation rate	l/min	13.8
BW = body weight	kg	70
Ds = duration of shower	min	30
Dt = total duration in shower room	min	60
R = air exchange rate	min^{-1}	0.0083
Ca = indoor air concentration of VOCs	µg/m^3	Solved by Eq 7

Equation 1:	Kg(VOC) =	$3000 * (18 / MW)^{0.5}$
Equation 2:	Kl(VOC) =	$20 * (44 / MW)^{0.5}$
Equation 3:	KL =	$((1 / Kl(VOC)) + (0.024 / (Kg (VOC) * H)))^{-1}$
Equation 4:	Kal =	$(KL * (((Tl * Us) / (Ts * Ul))^{-0.5}))$
Equation 5:	Cwd =	(Cwo * (1-EXP((-1 * Kal * sdt)/(60 * d))))
Equation 6:	S =	(Cwd * FR / SV)
Equation 7:	Ca =	If t>Ds [(S / R) * (Ds + (EXP(-R * Dt) / R) -(EXP(R *(Ds - Dt)) / R)] / Dt * 1/1000

TABLE 7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Groundwater	Tap Water	Ingestion	Chloroform	3.7E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.4E-04	mg/kg/day	1.0E-02	mg/kg/day	2.4E-02
				Tetrachloroethene	5.8E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.7E-04	mg/kg/day	1.0E-02	mg/kg/day	3.7E-02
				Trichloroethene	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.3E-04	mg/kg/day	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.7E-05	mg/kg/day	3.0E-03	mg/kg/day	2.6E-02
				bis(2-Ethylhexyl)phthalate	5.9E+01	ug/L	N/A	N/A	N/A	N/A	N/A	3.8E-03	mg/kg/day	2.0E-02	mg/kg/day	1.9E-01
				2,4,6-Trinitrotoluene	5.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	3.5E-03	mg/kg/day	5.0E-04	mg/kg/day	7.0E+00
				2-Amino-4,6-dinitrotoluene	7.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	4.7E-03	mg/kg/day	2.0E-03	mg/kg/day	2.3E+00
				3,5-Dinitroaniline	4.4E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.8E-04	mg/kg/day	N/A		N/A
				4-Amino-2,6-dinitrotoluene	8.2E+01	ug/L	N/A	N/A	N/A	N/A	N/A	5.2E-03	mg/kg/day	2.0E-03	mg/kg/day	2.6E+00
				RDX	1.0E+02	ug/L	N/A	N/A	N/A	N/A	N/A	6.5E-03	mg/kg/day	3.0E-03	mg/kg/day	2.2E+00
				Antimony-dissolved	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.3E-04	mg/kg/day	4.0E-04	mg/kg/day	3.2E-01
				Chromium-dissolved	3.1E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.0E-03	mg/kg/day	3.0E-03	mg/kg/day	6.7E-01
				Manganese-dissolved	7.6E+01	ug/L	N/A	N/A	N/A	N/A	N/A	4.9E-03	mg/kg/day	1.4E-01	mg/kg/day	3.5E-02
			Exp. Route Total								N/A					1.5E+01
			Dermal Absorption	Chloroform	3.7E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.1E-05	mg/kg/day	1.0E-02	mg/kg/day	2.1E-03
				Tetrachloroethene	5.8E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.2E-04	mg/kg/day	1.0E-02	mg/kg/day	2.2E-02
				Trichloroethene	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.1E-05	mg/kg/day	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.2E-06	mg/kg/day	3.0E-03	mg/kg/day	1.4E-03
				bis(2-Ethylhexyl)phthalate	5.9E+01	ug/L	N/A	N/A	N/A	N/A	N/A	5.6E-03	mg/kg/day	2.0E-02	mg/kg/day	2.8E-01
				2,4,6-Trinitrotoluene	5.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	9.6E-05	mg/kg/day	5.0E-04	mg/kg/day	1.9E-01
				2-Amino-4,6-dinitrotoluene	7.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.4E-04	mg/kg/day	2.0E-03	mg/kg/day	1.2E-01
				3,5-Dinitroaniline	4.4E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.7E-05	mg/kg/day	N/A		N/A
				4-Amino-2,6-dinitrotoluene	8.2E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.7E-04	mg/kg/day	2.0E-03	mg/kg/day	1.3E-01
				RDX	1.0E+02	ug/L	N/A	N/A	N/A	N/A	N/A	5.6E-05	mg/kg/day	3.0E-03	mg/kg/day	1.9E-02
				Antimony-dissolved	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	8.4E-07	mg/kg/day	6.0E-05	mg/kg/day	1.4E-02
				Chromium-dissolved	3.1E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg/day	7.5E-05	mg/kg/day	3.5E-01
				Manganese-dissolved	7.6E+01	ug/L	N/A	N/A	N/A	N/A	N/A	3.2E-05	mg/kg/day	5.6E-03	mg/kg/day	5.8E-03
			Exp. Route Total								N/A					1.1E+00
		Exposure Point Total									N/A					1.7E+01
	Exposure Medium Total										N/A					1.7E+01

TABLE 7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
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	
	Air	Water Vapors at Showerhead	Inhalation	Chloroform	1.1E-02	mg/m^3	N/A	N/A	N/A	N/A	N/A	4.4E-04	mg/m^3	9.8E-02	mg/m^3	4.5E-03
				Tetrachloroethene	1.6E-02	mg/m^3	N/A	N/A	N/A	N/A	N/A	6.3E-04	mg/m^3	2.7E-01	mg/m^3	2.3E-03
				Trichloroethene	6.0E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.4E-04	mg/m^3	N/A		N/A
				Vinyl chloride	5.1E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.1E-04	mg/m^3	1.0E-01	mg/m^3	2.1E-03
			Exp. Route Total								N/A					8.9E-03
		Exposure Point Total									N/A					8.9E-03
		Indoor Air	Inhalation	Tetrachloroethene	2.0E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.0E-04	mg/m^3	2.7E-01	mg/m^3	7.2E-04
			Exp. Route Total								N/A					7.2E-04
		Exposure Point Total									N/A					7.2E-04
	Exposure Medium Total										N/A					9.6E-03
Medium Total											N/A					1.7E+01
Total of Receptor Risks Across All Media											N/A	Total of Receptor Hazards Across All Media				1.7E+01

Notes-
N/A = Not applicable.
DA_{event} for dermal exposure to groundwater calculated on Table 7.3.RME Supplement A

Inhalation explosure while showering calculated on Table 7.3.RME Supplement B

Table 7.3.RME Supplement A
Calculation of DAevent
Resident Child Ground Water
Site 8, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Water Concentration (CW) (μg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Chloroform	3.7E+00	6.8E-03	2.9E-02	5.0E-01	1.2E+00	1.0E+00	1.0	4.9E-08	2
Tetrachloroethene	5.8E+00	3.3E-02	1.7E-01	9.1E-01	2.2E+00	1.0E+00	1.0	5.1E-07	2
Trichloroethene	2.0E+00	1.2E-02	1.0E-01	5.8E-01	1.4E+00	1.0E+00	1.0	4.9E-08	2
Vinyl chloride	1.2E+00	5.6E-03	1.7E-02	2.4E-01	5.7E-01	1.0E+00	1.0	9.9E-09	3
bis(2-Ethylhexyl)phthalate	5.9E+01	2.5E-02	2.0E-01	1.7E+01	4.0E+01	8.0E-01	1.0	1.3E-05	2
2,4,6-Trinitrotoluene[2]	5.5E+01	1.1E-03	6.2E-03	2.0E+00	4.7E+00	1.0E+00	1.0	2.3E-07	2
2-Amino-4,6-dinitrotoluene[2]	7.3E+01	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	1.0	5.6E-07	2
3,5-Dinitroaniline	4.4E+00	3.2E-03	1.7E-02	1.1E+00	2.7E+00	1.0E+00	1.0	4.1E-08	2
4-Amino-2,6-dinitrotoluene[2]	8.2E+01	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	1.0	6.3E-07	2
RDX[2]	1.0E+02	3.5E-04	3.5E-04	1.8E+00	4.4E+00	1.0E+00	1.0	1.3E-07	2
Antimony-dissolved	2.0E+00	1.0E-03	N/A	N/A	N/A	N/A	1.0	2.0E-09	1
Chromium-dissolved	3.1E+01	2.0E-03	N/A	N/A	N/A	N/A	1.0	6.3E-08	1
Manganese-dissolved	7.6E+01	1.0E-03	N/A	N/A	N/A	N/A	1.0	7.6E-08	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.2.RME Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.3.RME Supplement B

Inhalation Exposure Concentrations from Foster and Chrostowski Shower Model

Child Resident

Site 8, NWS Yorktown

Chemical of Potential Concern	Exposure Point Concentration Cwo (µg/L)	Molecular weight (MW) (g/mole)	Henry's Law Constant (H) (atm-m^3/mole)	Kg (VOC) (cm/hr)	Kl (VOC) (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd (µg/L)	S (µg/m^3 -min)	Ca (mg/m^3)
Chloroform	3.7E+00	1.2E+02	3.7E-03	1.2E+03	1.2E+01	1.1E+01	1.5E+01	4.4E-01	3.7E-01	1.1E-02
Tetrachloroethene	5.8E+00	1.7E+02	1.8E-02	9.9E+02	1.0E+01	1.0E+01	1.4E+01	6.3E-01	5.2E-01	1.6E-02
Trichloroethene	2.0E+00	1.3E+02	9.9E-03	1.1E+03	1.2E+01	1.1E+01	1.5E+01	2.4E-01	2.0E-01	6.0E-03
Vinyl chloride	1.2E+00	6.3E+01	2.8E-02	1.6E+03	1.7E+01	1.7E+01	2.2E+01	2.0E-01	1.7E-01	5.1E-03

Variables	Units	Exposure Assumptions
Kg(VOC) = gas-film mass transfer coefficient	cm/hr	Solved by Eq 1
Kl(VOC) = liquid-film mass transfer coefficient	cm/hr	Solved by Eq 2
KL = overall mass transfer coefficient	cm/hr	Solved by Eq 3
Kal = adjusted overall mass transfer coeff.	cm/hr	Solved by Eq 4
Tl = Calibration temp. of water	K (20C +273)	293
Ts = Shower water temperature	k (45C)	318
Us = water viscosity at Ts	centipoise	0.596
Ul = water viscosity at Tl	cp	1.002
Cwd = conc. leaving droplets after time sdt	µg/l	Solved by Eq 5
sdt = shower droplet drop time	sec	0.5
d = shower droplet diameter	mm	1
FR = shower water flow rate	l/min	10
SV = shower room air volume	m^3	12
S = indoor VOC generation rate	µg/m^3-min	Solved by Eq 6
Ds = duration of shower	min	60
Dt = total duration in shower room	min	80
R = air exchange rate	min^{-1}	0.0083
Ca = indoor air concentration of VOCs	µg/m^3	Solved by Eq 7

Equation 1:	Kg(VOC) =	3000 * (18 / MW)$^{0.5}$
Equation 2:	Kl(VOC) =	20 * (44 / MW)$^{0.5}$
Equation 3:	KL =	((1 / Kl(VOC)) + (0.024 / (Kg (VOC) * H)))$^{-1}$
Equation 4:	Kal =	(KL * (((Tl * Us) / (Ts * Ul))$^{-0.5}$))
Equation 5:	Cwd =	(Cwo * (1-EXP((-1 * Kal * sdt)/(60 * d))))
Equation 6:	S =	(Cwd * FR / SV)
Equation 7:	Ca =	If t>Ds [(S / R) * (Ds + (EXP(-R * Dt) / R) -(EXP(R *(Ds - Dt)) / R)] / Dt * 1/1000

TABLE 7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/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	
Groundwater	Groundwater	Tap Water	Ingestion	Chloroform	3.7E+00	ug/L	5.5E-05	mg/kg/day	3.1E-02	(mg/kg-day)$^{-1}$	1.7E-06	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	5.8E+00	ug/L	8.7E-05	mg/kg/day	5.4E-01	(mg/kg-day)$^{-1}$	4.7E-05	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	2.0E+00	ug/L	3.0E-05	mg/kg/day	5.9E-03	(mg/kg-day)$^{-1}$	1.8E-07	N/A	N/A	N/A	N/A	N/A
				Vinyl chloride	1.2E+00	ug/L	1.8E-05	mg/kg/day	7.2E-01	(mg/kg-day)$^{-1}$	1.3E-05	N/A	N/A	N/A	N/A	N/A
				bis(2-Ethylhexyl)phthalate	5.9E+01	ug/L	8.8E-04	mg/kg/day	1.4E-02	(mg/kg-day)$^{-1}$	1.2E-05	N/A	N/A	N/A	N/A	N/A
				2,4,6-Trinitrotoluene	5.5E+01	ug/L	8.2E-04	mg/kg/day	3.0E-02	(mg/kg-day)$^{-1}$	2.5E-05	N/A	N/A	N/A	N/A	N/A
				2-Amino-4,6-dinitrotoluene	7.3E+01	ug/L	1.1E-03	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				3,5-Dinitroaniline	4.4E+00	ug/L	6.6E-05	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				4-Amino-2,6-dinitrotoluene	8.2E+01	ug/L	1.2E-03	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				RDX	1.0E+02	ug/L	1.5E-03	mg/kg/day	1.1E-01	(mg/kg-day)$^{-1}$	1.7E-04	N/A	N/A	N/A	N/A	N/A
				Antimony-dissolved	2.0E+00	ug/L	3.0E-05	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				Chromium-dissolved	3.1E+01	ug/L	4.7E-04	mg/kg/day	5.0E-01	(mg/kg-day)$^{-1}$	2.3E-04	N/A	N/A	N/A	N/A	N/A
				Manganese-dissolved	7.6E+01	ug/L	1.1E-03	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								5.0E-04					N/A
			Dermal Absorption	Chloroform	3.7E+00	ug/L	4.9E-06	mg/kg/day	3.1E-02	(mg/kg-day)$^{-1}$	1.5E-07	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	5.8E+00	ug/L	5.1E-05	mg/kg/day	5.4E-01	(mg/kg-day)$^{-1}$	2.8E-05	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	2.0E+00	ug/L	4.9E-06	mg/kg/day	5.9E-03	(mg/kg-day)$^{-1}$	2.9E-08	N/A	N/A	N/A	N/A	N/A
				Vinyl chloride	1.2E+00	ug/L	9.6E-07	mg/kg/day	7.2E-01	(mg/kg-day)$^{-1}$	6.9E-07	N/A	N/A	N/A	N/A	N/A
				bis(2-Ethylhexyl)phthalate	5.9E+01	ug/L	1.3E-03	mg/kg/day	1.4E-02	(mg/kg-day)$^{-1}$	1.9E-05	N/A	N/A	N/A	N/A	N/A
				2,4,6-Trinitrotoluene	5.5E+01	ug/L	2.3E-05	mg/kg/day	3.0E-02	(mg/kg-day)$^{-1}$	6.9E-07	N/A	N/A	N/A	N/A	N/A
				2-Amino-4,6-dinitrotoluene	7.3E+01	ug/L	5.6E-05	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				3,5-Dinitroaniline	4.4E+00	ug/L	4.1E-06	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				4-Amino-2,6-dinitrotoluene	8.2E+01	ug/L	6.3E-05	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				RDX	1.0E+02	ug/L	1.3E-05	mg/kg/day	1.1E-01	(mg/kg-day)$^{-1}$	1.5E-06	N/A	N/A	N/A	N/A	N/A
				Antimony-dissolved	2.0E+00	ug/L	1.7E-07	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				Chromium-dissolved	3.1E+01	ug/L	5.4E-06	mg/kg/day	5.0E-01	(mg/kg-day)$^{-1}$	2.7E-06	N/A	N/A	N/A	N/A	N/A
				Manganese-dissolved	7.6E+01	ug/L	6.5E-06	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								5.2E-05					N/A
		Exposure Point Total									5.5E-04					N/A

TABLE 7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/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										5.5E-04					N/A
	Air	Water Vapors at Showerhead	Inhalation	Chloroform	1.6E-01	mg-hr-yr/m^3-day	9.3E-05	mg/m^3	2.3E-05	(µg/m^3)$^{-1}$	2.1E-06	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	2.3E-01	mg-hr-yr/m3-day	1.3E-04	mg/m^3	5.9E-06	(µg/m^3)$^{-1}$	7.8E-07	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	8.8E-02	mg-hr-yr/m3-day	5.0E-05	mg/m^3	2.0E-06	(µg/m^3)$^{-1}$	1.0E-07	N/A	N/A	N/A	N/A	N/A
				Vinyl chloride	7.5E-02	mg-hr-yr/m3-day	4.3E-05	mg/m^3	4.4E-06	(µg/m^3)$^{-1}$	1.9E-07	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								3.2E-06					N/A
		Exposure Point Total									3.2E-06					N/A
		Indoor Air	Inhalation	Tetrachloroethene	2.0E-04	mg/m^3	8.4E-05	mg/m^3	5.9E-06	(ug/m3)$^{-1}$	4.9E-07	NA	NA	NA	NA	NA
			Exp. Route Total								4.9E-07					N/A
		Exposure Point Total									4.9E-07					N/A
	Exposure Medium Total										3.7E-06					N/A
Medium Total											5.6E-04					N/A
									Total of Receptor Risks Across All Media		5.6E-04			Total of Receptor Hazards Across All Media		N/A

Notes-

N/A = Not applicable.

DA_{event} for dermal exposure to groundwater calculated on Tables 7.2.RME Supplement A and 7.3.RME Supplement

Inhalation exposure while showering calculated on Tables 7.2.RME Supplement C and 7.3.RME Supplement B

TABLE 7.5.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Construction Worker
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	
Groundwater	Groundwater	Water in Excavation Pit	Dermal Absorption	Chloroform	3.7E+00	ug/L	8.8E-08	mg/kg/day	3.1E-02	$(mg/kg\text{-}day)^{-1}$	2.7E-09	6.2E-06	mg/kg/day	1.0E-02	mg/kg/day	6.2E-04
				Tetrachloroethene	5.8E+00	ug/L	6.8E-07	mg/kg/day	5.4E-01	$(mg/kg\text{-}day)^{-1}$	3.7E-07	4.8E-05	mg/kg/day	1.0E-01	mg/kg/day	4.8E-04
				Trichloroethene	2.0E+00	ug/L	7.9E-08	mg/kg/day	5.9E-03	$(mg/kg\text{-}day)^{-1}$	4.7E-10	5.5E-06	mg/kg/day	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	2.2E-08	mg/kg/day	7.2E-01	$(mg/kg\text{-}day)^{-1}$	1.6E-08	1.6E-06	mg/kg/day	3.0E-03	mg/kg/day	5.2E-04
				bis(2-Ethylhexyl)phthalate	5.9E+01	ug/L	1.5E-05	mg/kg/day	1.4E-02	$(mg/kg\text{-}day)^{-1}$	2.1E-07	1.1E-03	mg/kg/day	2.0E-02	mg/kg/day	5.3E-02
				2,4,6-Trinitrotoluene	5.5E+01	ug/L	2.8E-07	mg/kg/day	3.0E-02	$(mg/kg\text{-}day)^{-1}$	8.4E-09	2.0E-05	mg/kg/day	5.0E-04	mg/kg/day	3.9E-02
				2-Amino-4,6-dinitrotoluene	7.3E+01	ug/L	7.4E-07	mg/kg/day	N/A		N/A	5.2E-05	mg/kg/day	2.0E-03	mg/kg/day	2.6E-02
				3,5-Dinitroaniline	4.4E+00	ug/L	5.7E-08	mg/kg/day	N/A		N/A	4.0E-06	mg/kg/day	N/A	mg/kg/day	N/A
				4-Amino-2,6-dinitrotoluene	8.2E+01	ug/L	8.3E-07	mg/kg/day	N/A		N/A	5.8E-05	mg/kg/day	2.0E-03	mg/kg/day	2.9E-02
				RDX	1.0E+02	ug/L	1.7E-07	mg/kg/day	1.1E-01	$(mg/kg\text{-}day)^{-1}$	1.8E-08	1.2E-05	mg/kg/day	3.0E-03	mg/kg/day	3.9E-03
				Antimony	2.0E+00	ug/L	6.4E-09	mg/kg/day	N/A		N/A	4.5E-07	mg/kg/day	6.0E-05	mg/kg/day	7.4E-03
				Arsenic	8.1E+00	ug/L	2.6E-08	mg/kg/day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	3.9E-08	1.8E-06	mg/kg/day	3.0E-04	mg/kg/day	6.0E-03
				Chromium	3.1E+01	ug/L	2.0E-07	mg/kg/day	5.0E-01	$(mg/kg\text{-}day)^{-1}$	1.0E-07	1.4E-05	mg/kg/day	5.0E-04	mg/kg/day	2.8E-02
				Cobalt	1.6E+00	ug/L	2.0E-07	mg/kg/day	N/A		N/A	3.5E-07	mg/kg/day	3.0E-03	mg/kg/day	1.2E-04
				Iron	5.2E+03	ug/L	5.1E-09	mg/kg/day	N/A		N/A	1.2E-03	mg/kg/day	7.0E-01	mg/kg/day	1.7E-03
				Manganese	1.1E+02	ug/L	1.7E-05	mg/kg/day	N/A		N/A	2.5E-05	mg/kg/day	5.6E-03	mg/kg/day	4.4E-03
				Vanadium	1.1E+01	ug/L	3.6E-07	mg/kg/day	N/A		N/A	2.5E-06	mg/kg/day	1.8E-04	mg/kg/day	1.4E-02
			Exp. Route Total								7.6E-07					2.1E-01
		Exposure Point Total									7.6E-07					2.1E-01
	Exposure Medium Total										7.6E-07					2.1E-01
Groundwater	Air	Water Vapors in Excavation Pit	Inhalation	Chloroform	3.7E+00	ug/L	2.5E-07	mg/m^3	2.3E-05	$(\mu g/m^3)^{-1}$	5.8E-09	1.8E-05	mg/m^3	9.8E-02	mg/m^3	1.8E-04
				Tetrachloroethene	5.8E+00	ug/L	3.4E-07	mg/m^3	5.9E-06	$(\mu g/m^3)^{-1}$	2.0E-09	2.4E-05	mg/m^3	2.7E-01	mg/m^3	8.8E-05
				Trichloroethene	2.0E+00	ug/L	1.3E-07	mg/m^3	2.0E-06	$(\mu g/m^3)^{-1}$	2.6E-10	9.2E-06	mg/m^3	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	1.1E-07	mg/m^3	4.4E-06	$(\mu g/m^3)^{-1}$	5.0E-10	8.0E-06	mg/m^3	1.0E-01	mg/m^3	8.0E-05
			Exp. Route Total								8.6E-09					3.5E-04
		Exposure Point Total									8.6E-09					3.5E-04
	Exposure Medium Total										8.6E-09					3.5E-04
Medium Total											7.7E-07					2.1E-01
									Total of Receptor Risks Across All Media		7.7E-07			Total of Receptor Hazards Across All Media		2.1E-01

Notes-
Subchronic values used when available.
N/A = Not applicable.
DAevent for exposure to groundwater during excavation activities calculated on Table 7.4.RME Supplement A.
Inhalation concentration in excavation pit calculated on Table 7.4.RME Supplement B.

Table 7.5.RME Supplement A
Calculation of DAevent
Construction Worker
Site 8, NWS Yorktown

Chemical of Potential Concern	Water Concentration (CW) (µg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Chloroform	3.7E+00	6.8E-03	2.9E-02	5.0E-01	1.2E+00	1.0E+00	8.0	2.2E-07	3
Tetrachloroethene	5.8E+00	3.3E-02	2.0E-01	9.1E-01	2.2E+00	1.0E+00	8.0	1.7E-06	3
Trichloroethene	2.0E+00	1.2E-02	1.0E-01	5.8E-01	1.4E+00	1.0E+00	8.0	2.0E-07	3
Vinyl chloride	1.2E+00	5.6E-03	1.7E-02	2.4E-01	5.7E-01	1.0E+00	8.0	5.6E-08	3
bis(2-Ethylhexyl)phthalate	5.9E+01	2.5E-02	2.0E-01	1.7E+01	4.0E+01	8.0E-01	8.0	3.8E-05	2
2,4,6-Trinitrotoluene[2]	5.5E+01	1.1E-03	6.2E-03	2.0E+00	4.7E+00	1.0E+00	8.0	7.0E-07	3
2-Amino-4,6-dinitrotoluene[2]	7.3E+01	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	8.0	1.9E-06	3
3,5-Dinitroaniline	4.4E+00	3.2E-03	1.7E-02	1.1E+00	2.7E+00	1.0E+00	8.0	1.4E-07	3
4-Amino-2,6-dinitrotoluene[2]	8.2E+01	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	8.0	2.1E-06	3
RDX[2]	1.0E+02	3.5E-04	3.5E-04	1.8E+00	4.4E+00	1.0E+00	8.0	4.2E-07	3
Antimony	2.0E+00	1.0E-03	N/A	N/A	N/A	N/A	8.0	1.6E-08	1
Arsenic	8.1E+00	1.0E-03	NA	NA	NA	NA	8.0	6.5E-08	1
Chromium	3.1E+01	2.0E-03	N/A	N/A	N/A	N/A	8.0	5.0E-07	1
Cobalt	1.6E+00	1.0E-03	NA	NA	NA	NA	8.0	1.3E-08	1
Iron	5.2E+03	1.0E-03	NA	NA	NA	NA	8.0	4.2E-05	1
Manganese	1.1E+02	1.0E-03	N/A	N/A	N/A	N/A	8.0	8.9E-07	1
Vanadium	1.1E+01	1.0E-03	N/A	N/A	N/A	N/A	8.0	9.1E-08	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.1.RME Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.5.RME Supplement B
Calculation of Inhalation Concentration in Excavation Trench
Construction Worker
Site 8, NWS Yorktown

Exposure-point concentrations (inhalation) for construction/utility workers in a trench: Groundwater less than 15 feet deep	CAS No.	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Gas-Phase Mass Transfer Coefficient KiG cm/s	Liquid-Phase Mass Transfer Coefficient KiL cm/s	Overall Mass Transfer Coefficient Ki cm/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3	Concentration of Contaminant in Trench Ctrench mg/m3
Volatile Organic Compounds (VOCs)										
Chloroform	67-66-3	119.38	3.7E-03	4.4E-01	1.0E-03	1.0E-03	3.7E+00	4.2E-02	1.5E-01	1.5E-04
Tetrachloroethene	127-18-4	165.83	1.8E-02	4.0E-01	8.8E-04	8.8E-04	5.8E+00	3.6E-02	2.1E-01	2.1E-04
Trichloroethene	79-01-6	131.39	1.0E-02	4.3E-01	9.9E-04	9.8E-04	2.0E+00	4.0E-02	8.1E-02	8.1E-05
Vinyl Chloride (commercial, construction)	75-01-4	62.50	2.7E-02	5.5E-01	1.4E-03	1.4E-03	1.2E+00	5.9E-02	7.0E-02	7.0E-05

Equations

$$VF = (K_i \times A \times F \times 10^{-3} \times 10^{4} \times 3600) / (ACH \times V)$$

$$K_i = 1 / \{(1/k_{iL}) + [(R\ T) / (H_i\ k_{iG})]\}$$

$$k_{iL} = (MW_{O2}/MW_i)^{0.5} \times (T/298) \times k_{L,}O_2$$

$$k_{iG} = (MW_{H2O}/MW_i)^{0.335} \times (T/298)^{1.005} \times k_G,\ H_2O$$

Parameter Value

For Mass-Transfer Coefficients

Kg,H2O	0.833	cm/s
MWH2O	18	
Kg,O2	0.002	cm/s
MWO2	32	
T	**77**	F
T	298	K
R	8.20E-05	atm-m3/mol-K

For Emission Flux and Concentration in Trench

CF1	1.00E-03	L/cm3
CF2	1.00E+04	cm2/m2
CF3	3600	s/hr
F	**1**	
ACH	360	hr-1

Trench dimensions

Length	**10**	ft
	3.05	m
Width	**10**	ft
	3.05	m
Depth	**8**	ft
	2.44	m
Width/Depth	1.25	

TABLE 7.1.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Groundwater	Tap Water	Ingestion	Chloroform	2.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.8E-05	mg/kg/day	1.0E-02	mg/kg/day	3.8E-03
				Tetrachloroethene	5.3E+00	ug/L	N/A	N/A	N/A	N/A	N/A	6.8E-05	mg/kg/day	1.0E-02	mg/kg/day	6.8E-03
				Trichloroethene	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg/day	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.5E-05	mg/kg/day	3.0E-03	mg/kg/day	5.1E-03
				bis(2-Ethylhexyl)phthalate	1.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.9E-04	mg/kg/day	2.0E-02	mg/kg/day	9.6E-03
				2,4,6-Trinitrotoluene	6.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	8.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.7E-01
				2-Amino-4,6-dinitrotoluene	8.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.1E-04	mg/kg/day	2.0E-03	mg/kg/day	5.7E-02
				3,5-Dinitroaniline	8.8E-01	ug/L	N/A	N/A	N/A	N/A	N/A	1.1E-05	mg/kg/day	N/A		N/A
				4-Amino-2,6-dinitrotoluene	9.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.3E-04	mg/kg/day	2.0E-03	mg/kg/day	6.4E-02
				RDX	3.6E+01	ug/L	N/A	N/A	N/A	N/A	N/A	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	1.5E-01
				Antimony-dissolved	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/kg/day	4.0E-04	mg/kg/day	6.4E-02
				Chromium-dissolved	5.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.1E-05	mg/kg/day	3.0E-03	mg/kg/day	2.4E-02
				Manganese-dissolved	3.2E+01	ug/L	N/A	N/A	N/A	N/A	N/A	4.2E-04	mg/kg/day	1.4E-01	mg/kg/day	3.0E-03
			Exp. Route Total								N/A					5.6E-01
			Dermal Absorption	Chloroform	2.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.2E-06	mg/kg/day	1.0E-02	mg/kg/day	3.2E-04
				Tetrachloroethene	5.3E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.8E-05	mg/kg/day	1.0E-02	mg/kg/day	3.8E-03
				Trichloroethene	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.0E-06	mg/kg/day	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.5E-07	mg/kg/day	3.0E-03	mg/kg/day	2.5E-04
				bis(2-Ethylhexyl)phthalate	1.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.8E-04	mg/kg/day	2.0E-02	mg/kg/day	1.4E-02
				2,4,6-Trinitrotoluene	6.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.2E-06	mg/kg/day	5.0E-04	mg/kg/day	4.4E-03
				2-Amino-4,6-dinitrotoluene	8.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	5.6E-06	mg/kg/day	2.0E-03	mg/kg/day	2.8E-03
				3,5-Dinitroaniline	8.8E-01	ug/L	N/A	N/A	N/A	N/A	N/A	6.8E-07	mg/kg/day	N/A		N/A
				4-Amino-2,6-dinitrotoluene	9.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	6.3E-06	mg/kg/day	2.0E-03	mg/kg/day	3.2E-03
				RDX	3.6E+01	ug/L	N/A	N/A	N/A	N/A	N/A	3.9E-06	mg/kg/day	3.0E-03	mg/kg/day	1.3E-03
				Antimony-dissolved	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	8.2E-08	mg/kg/day	6.0E-05	mg/kg/day	1.4E-03
				Chromium-dissolved	5.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.6E-07	mg/kg/day	7.5E-05	mg/kg/day	6.1E-03
				Manganese-dissolved	3.2E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.3E-06	mg/kg/day	5.6E-03	mg/kg/day	2.4E-04
			Exp. Route Total								N/A					3.8E-02
		Exposure Point Total									N/A					5.9E-01
	Exposure Medium Total										N/A					5.9E-01

TABLE 7.1.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Air	Water Vapors at Showerhead	Inhalation	Chloroform	3.0E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	4.8E-04	mg/m^3	9.8E-02	mg/m^3	4.9E-03
				Tetrachloroethene	4.9E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	7.8E-04	mg/m^3	2.7E-01	mg/m^3	2.9E-03
				Trichloroethene	2.0E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	3.3E-04	mg/m^3	N/A		N/A
				Vinyl chloride	1.7E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.8E-04	mg/m^3	1.0E-01	mg/m^3	2.8E-03
			Exp. Route Total								N/A					1.1E-02
		Exposure Point Total									N/A					1.1E-02
		Indoor Air	Inhalation	Tetrachloroethene	2.0E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.3E-04	mg/m^3	2.7E-01	mg/m^3	4.8E-04
			Exp. Route Total								N/A					4.8E-04
		Exposure Point Total									N/A					4.8E-04
	Exposure Medium Total										N/A					1.1E-02
Medium Total											N/A					6.0E-01
Total of Receptor Risks Across All Media											N/A	Total of Receptor Hazards Across All Media				6.0E-01

Notes-
N/A = Not applicable.
DAevent for exposure to groundwater while showering is calculated on Table 7.1.CTE Supplement A.
Inhalation exposure for shower calculated on Table 7.1.CTE Supplement C.

Table 7.1.CTE Supplement A
Calculation of DAevent
Resident Adult Ground Water
Site 8, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Water Concentration (CW) (μg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Chloroform	2.9E+00	6.8E-03	2.9E-02	5.0E-01	1.2E+00	1.0E+00	0.25	2.0E-08	2
Tetrachloroethene	5.3E+00	3.3E-02	2.0E-01	9.1E-01	2.2E+00	1.0E+00	0.25	2.3E-07	2
Trichloroethene	2.0E+00	1.2E-02	1.0E-01	5.8E-01	1.4E+00	1.0E+00	0.25	2.4E-08	2
Vinyl chloride	1.2E+00	5.6E-03	1.7E-02	2.4E-01	5.7E-01	1.0E+00	0.25	4.5E-09	2
bis(2-Ethylhexyl)phthalate	1.5E+01	2.5E-02	2.0E-01	1.7E+01	4.0E+01	8.0E-01	0.25	1.7E-06	2
2,4,6-Trinitrotoluene[2]	6.5E+00	1.1E-03	6.2E-03	2.0E+00	4.7E+00	1.0E+00	0.25	1.3E-08	2
2-Amino-4,6-dinitrotoluene[2]	8.9E+00	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	0.25	3.4E-08	2
3,5-Dinitroaniline	8.8E-01	3.2E-03	1.7E-02	1.1E+00	2.7E+00	1.0E+00	0.25	4.1E-09	2
4-Amino-2,6-dinitrotoluene[2]	9.9E+00	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	0.25	3.8E-08	2
RDX[2]	3.6E+01	3.5E-04	3.5E-04	1.8E+00	4.4E+00	1.0E+00	0.25	2.4E-08	2
Antimony-dissolved	2.0E+00	1.0E-03	N/A	N/A	N/A	N/A	0.25	5.0E-10	1
Chromium-dissolved	5.5E+00	2.0E-03	N/A	N/A	N/A	N/A	0.25	2.8E-09	1
Manganese-dissolved	3.2E+01	1.0E-03	N/A	N/A	N/A	N/A	0.25	8.1E-09	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.1.CTE Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.1.CTE Supplement B
Calculation of DAevent
Site 8, NWS Yorktown, Yorktown, Virginia

Chemical	**MW**	**Kp (cm/hr)**	**B[1]**	**Dsc/lsc[1]**	**lsc (cm)**	**Dsc (cm^2/hr)**	**τ[1] (hr)**	**c[1]**	**b[1]**	**t*[1] (hr)**
2,4,6-Trinitrotoluene	227	1.1E-03	6.2E-03	8.5E-05	1.0E-03	8.5E-08	2.0E+00	3.4E-01	3.1E-01	4.7E+00
2-Amino-4,6-dinitrotoluene	197	2.4E-03	1.3E-02	1.2E-04	1.0E-03	1.2E-07	1.3E+00	3.4E-01	3.1E-01	3.2E+00
3,5-Dinitroaniline	183	3.2E-03	1.7E-02	1.5E-04	1.0E-03	1.5E-07	1.1E+00	3.4E-01	3.1E-01	2.7E+00
4-Amino-2,6-dinitrotoluene	197	2.4E-03	1.3E-02	1.2E-04	1.0E-03	1.2E-07	1.3E+00	3.4E-01	3.1E-01	3.2E+00
RDX	222.12	3.5E-04	2.0E-03	9.0E-05	1.0E-03	9.0E-08	1.8E+00	3.3E-01	3.0E-01	4.4E+00

1. Equations from *Dermal Exposure Assessment: Principles and Applications* . EPA/600/8-91/011B. January 1992.
Parameter values from RAIS database (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).

Table 7.1.CTE Supplement B

Inhalation Exposure Concentrations from Foster and Chrostowski Shower Model

Adult Resident

Site 8, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Exposure Point Concentration Cwo (µg/L)	Molecular weight (MW) (g/mole)	Henry's Law Constant (H) (atm-m^3/mole)	Kg (VOC) (cm/hr)	Kl (VOC) (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd (µg/L)	S (µg/m^3 -min)	Ca (mg/m^3)
Chloroform	2.9E+00	1.2E+02	3.7E-03	1.2E+03	1.2E+01	1.1E+01	1.5E+01	3.5E-01	2.9E-01	3.0E-03
Tetrachloroethene	5.3E+00	1.7E+02	1.8E-02	9.9E+02	1.0E+01	1.0E+01	1.4E+01	5.7E-01	4.7E-01	4.9E-03
Trichloroethene	2.0E+00	1.3E+02	9.9E-03	1.1E+03	1.2E+01	1.1E+01	1.5E+01	2.4E-01	2.0E-01	2.0E-03
Vinyl chloride	1.2E+00	6.3E+01	2.8E-02	1.6E+03	1.7E+01	1.7E+01	2.2E+01	2.0E-01	1.7E-01	1.7E-03

Variables	Units	Exposure Assumptions
Kg(VOC) = gas-film mass transfer coefficient	cm/hr	Solved by Eq 1
Kl(VOC) = liquid-film mass transfer coefficient	cm/hr	Solved by Eq 2
KL = overall mass transfer coefficient	cm/hr	Solved by Eq 3
Kal = adjusted overall mass transfer coeff.	cm/hr	Solved by Eq 4
Tl = Calibration temp. of water	K (20C +273)	293
Ts = Shower water temperature	k (45C)	318
Us = water viscosity at Ts	centipoise	0.596
Ul = water viscosity at Tl	cp	1.002
Cwd = conc. leaving droplets after time sdt	µg/l	Solved by Eq 5
sdt = shower droplet drop time	sec	0.5
d = shower droplet diameter	mm	1
FR = shower water flow rate	l/min	10
SV = shower room air volume	m^3	12
S = indoor VOC generation rate	µg/m^3-min	Solved by Eq 6
Ds = duration of shower	min	15
Dt = total duration in shower room	min	30
R = air exchange rate	min^{-1}	0.0083
Ca = indoor air concentration of VOCs	µg/m^3	Solved by Eq 7

Equation 1:	Kg(VOC) =	$3000 * (18 / MW)^{0.5}$
Equation 2:	Kl(VOC) =	$20 * (44 / MW)^{0.5}$
Equation 3:	KL =	$((1 / Kl(VOC)) + (0.024 / (Kg (VOC) * H)))^{-1}$
Equation 4:	Kal =	$(KL * (((Tl * Us) / (Ts * Ul))^{-0.5}))$
Equation 5:	Cwd =	(Cwo * (1-EXP((-1 * Kal * sdt)/(60 * d))))
Equation 6:	S =	(Cwd * FR / SV)
Equation 7:	Ca =	If t>Ds [(S / R) * (Ds + (EXP(-R * Dt) / R) -(EXP(R *(Ds - Dt)) / R)] / Dt * 1/1000

TABLE 7.2.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Groundwater	Tap Water	Ingestion	Chloroform	2.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.3E-04	mg/kg/day	1.0E-02	mg/kg/day	1.3E-02
				Tetrachloroethene	5.3E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.3E-04	mg/kg/day	1.0E-02	mg/kg/day	2.3E-02
				Trichloroethene	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	8.5E-05	mg/kg/day	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	5.1E-05	mg/kg/day	3.0E-03	mg/kg/day	1.7E-02
				bis(2-Ethylhexyl)phthalate	1.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	6.4E-04	mg/kg/day	2.0E-02	mg/kg/day	3.2E-02
				2,4,6-Trinitrotoluene	6.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.8E-04	mg/kg/day	5.0E-04	mg/kg/day	5.5E-01
				2-Amino-4,6-dinitrotoluene	8.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.8E-04	mg/kg/day	2.0E-03	mg/kg/day	1.9E-01
				3,5-Dinitroaniline	8.8E-01	ug/L	N/A	N/A	N/A	N/A	N/A	3.8E-05	mg/kg/day	N/A		N/A
				4-Amino-2,6-dinitrotoluene	9.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.2E-04	mg/kg/day	2.0E-03	mg/kg/day	2.1E-01
				RDX	3.6E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.5E-03	mg/kg/day	3.0E-03	mg/kg/day	5.1E-01
				Antimony-dissolved	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	8.5E-05	mg/kg/day	4.0E-04	mg/kg/day	2.1E-01
				Chromium-dissolved	5.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.4E-04	mg/kg/day	3.0E-03	mg/kg/day	7.9E-02
				Manganese-dissolved	3.2E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.4E-03	mg/kg/day	1.4E-01	mg/kg/day	9.9E-03
			Exp. Route Total								N/A					1.9E+00
			Dermal Absorption	Chloroform	2.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	6.3E-06	mg/kg/day	1.0E-02	mg/kg/day	6.3E-04
				Tetrachloroethene	5.3E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.5E-05	mg/kg/day	1.0E-02	mg/kg/day	7.5E-03
				Trichloroethene	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.9E-06	mg/kg/day	N/A		N/A
				Vinyl chloride	1.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.5E-06	mg/kg/day	3.0E-03	mg/kg/day	4.9E-04
				bis(2-Ethylhexyl)phthalate	1.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	5.5E-04	mg/kg/day	2.0E-02	mg/kg/day	2.7E-02
				2,4,6-Trinitrotoluene	6.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.3E-06	mg/kg/day	5.0E-04	mg/kg/day	8.7E-03
				2-Amino-4,6-dinitrotoluene	8.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.1E-05	mg/kg/day	2.0E-03	mg/kg/day	5.5E-03
				3,5-Dinitroaniline	8.8E-01	ug/L	N/A	N/A	N/A	N/A	N/A	1.3E-06	mg/kg/day	N/A		N/A
				4-Amino-2,6-dinitrotoluene	9.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.2E-05	mg/kg/day	2.0E-03	mg/kg/day	6.2E-03
				RDX	3.6E+01	ug/L	N/A	N/A	N/A	N/A	N/A	7.6E-06	mg/kg/day	3.0E-03	mg/kg/day	2.5E-03
				Antimony-dissolved	2.0E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.9E-07	mg/kg/day	6.0E-05	mg/kg/day	3.1E-03
				Chromium-dissolved	5.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.0E-06	mg/kg/day	7.5E-05	mg/kg/day	1.4E-02
				Manganese-dissolved	3.2E+01	ug/L	N/A	N/A	N/A	N/A	N/A	3.0E-06	mg/kg/day	5.6E-03	mg/kg/day	5.4E-04
			Exp. Route Total								N/A					7.6E-02
		Exposure Point Total									N/A					1.9E+00

TABLE 7.2.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
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	
	Air	Water Vapors at Showerhead	Inhalation	Chloroform	3.9E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	3.4E-05	mg/m3	9.8E-02	mg/m^3	3.5E-04
				Tetrachloroethene	6.2E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	5.5E-05	mg/m3	2.7E-01	mg/m^3	2.0E-04
				Trichloroethene	2.6E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.3E-05	mg/m3	N/A		N/A
				Vinyl chloride	2.2E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.0E-05	mg/m3	1.0E-01	mg/m^3	2.0E-04
			Exp. Route Total								N/A					7.5E-04
		Exposure Point Total									N/A					7.5E-04
		Indoor Air	Inhalation	Tetrachloroethene	2.0E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.3E-07	mg/m^3	2.7E-01	mg/m^3	4.8E-07
			Exp. Route Total								N/A					4.8E-07
		Exposure Point Total									N/A					4.8E-07
	Exposure Medium Total										N/A					7.5E-04
Medium Total											N/A					1.9E+00
										Total of Receptor Risks Across All Media	N/A				Total of Receptor Hazards Across All Media	1.9E+00

Notes-
N/A = Not applicable.
DAevent for exposure to groundwater while showering is calculated on Table 7.1.CTE Supplement A

Table 7.2.CTE Supplement A
Calculation of DAevent
Resident Child Ground Water
Site 8, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Water Concentration (CW) (μg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Chloroform	2.9E+00	6.8E-03	2.9E-02	5.0E-01	1.2E+00	1.0E+00	0.33	2.2E-08	2
Tetrachloroethene	5.3E+00	3.3E-02	2.0E-01	9.1E-01	2.2E+00	1.0E+00	0.33	2.7E-07	2
Trichloroethene	2.0E+00	1.2E-02	1.0E-01	5.8E-01	1.4E+00	1.0E+00	0.33	2.8E-08	2
Vinyl chloride	1.2E+00	5.6E-03	1.7E-02	2.4E-01	5.7E-01	1.0E+00	0.33	5.2E-09	2
bis(2-Ethylhexyl)phthalate	1.5E+01	2.5E-02	2.0E-01	1.7E+01	4.0E+01	8.0E-01	0.33	1.9E-06	2
2,4,6-Trinitrotoluene[2]	6.5E+00	1.1E-03	6.2E-03	2.0E+00	4.7E+00	1.0E+00	0.33	1.5E-08	2
2-Amino-4,6-dinitrotoluene[2]	8.9E+00	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	0.33	3.9E-08	2
3,5-Dinitroaniline	8.8E-01	3.2E-03	1.7E-02	1.1E+00	2.7E+00	1.0E+00	0.33	4.7E-09	2
4-Amino-2,6-dinitrotoluene[2]	9.9E+00	2.4E-03	1.3E-02	1.3E+00	3.2E+00	1.0E+00	0.33	4.4E-08	2
RDX[2]	3.6E+01	3.5E-04	3.5E-04	1.8E+00	4.4E+00	1.0E+00	0.33	2.7E-08	2
Antimony-dissolved	2.0E+00	1.0E-03	N/A	N/A	N/A	N/A	0.33	6.6E-10	1
Chromium-dissolved	5.5E+00	2.0E-03	N/A	N/A	N/A	N/A	0.33	3.7E-09	1
Manganese-dissolved	3.2E+01	1.0E-03	N/A	N/A	N/A	N/A	0.33	1.1E-08	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.1.CTE Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.2.CTE Supplement B

Inhalation Exposure Concentrations from Foster and Chrostowski Shower Model

Child Resident

Site 8, NWS Yorktown

Chemical of Potential Concern	Exposure Point Concentration Cwo (µg/L)	Molecular weight (MW) (g/mole)	Henry's Law Constant (H) (atm-m^3/mole)	Kg (VOC) (cm/hr)	Kl (VOC) (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd (µg/L)	S (µg/m^3 -min)	Ca (mg/m^3)
Chloroform	2.9E+00	1.2E+02	3.7E-03	1.2E+03	1.2E+01	1.1E+01	1.5E+01	3.5E-01	2.9E-01	3.9E-03
Tetrachloroethene	5.3E+00	1.7E+02	1.8E-02	9.9E+02	1.0E+01	1.0E+01	1.4E+01	5.7E-01	4.7E-01	6.2E-03
Trichloroethene	2.0E+00	1.3E+02	9.9E-03	1.1E+03	1.2E+01	1.1E+01	1.5E+01	2.4E-01	2.0E-01	2.6E-03
Vinyl chloride	1.2E+00	6.3E+01	2.8E-02	1.6E+03	1.7E+01	1.7E+01	2.2E+01	2.0E-01	1.7E-01	2.2E-03

Variables	Units	Exposure Assumptions
Kg(VOC) = gas-film mass transfer coefficient	cm/hr	Solved by Eq 1
Kl(VOC) = liquid-film mass transfer coefficient	cm/hr	Solved by Eq 2
KL = overall mass transfer coefficient	cm/hr	Solved by Eq 3
Kal = adjusted overall mass transfer coeff.	cm/hr	Solved by Eq 4
Tl = Calibration temp. of water	K (20C +273)	293
Ts = Shower water temperature	k (45C)	318
Us = water viscosity at Ts	centipoise	0.596
Ul = water viscosity at Tl	cp	1.002
Cwd = conc. leaving droplets after time sdt	µg/l	Solved by Eq 5
sdt = shower droplet drop time	sec	0.5
d = shower droplet diameter	mm	1
FR = shower water flow rate	l/min	10
SV = shower room air volume	m^3	12
S = indoor VOC generation rate	µg/m^3-min	Solved by Eq 6
Ds = duration of shower	min	19.8
Dt = total duration in shower room	min	40
R = air exchange rate	min^{-1}	0.0083
Ca = indoor air concentration of VOCs	µg/m^3	Solved by Eq 7

Equation 1:	Kg(VOC) =	3000 * (18 / MW)$^{0.5}$
Equation 2:	Kl(VOC) =	20 * (44 / MW)$^{0.5}$
Equation 3:	KL =	((1 / Kl(VOC)) + (0.024 / (Kg (VOC) * H)))$^{-1}$
Equation 4:	Kal =	(KL * (((Tl * Us) / (Ts * Ul))$^{-0.5}$))
Equation 5:	Cwd =	(Cwo * (1-EXP((-1 * Kal * sdt)/(60 * d))))
Equation 6:	S =	(Cwd * FR / SV)
Equation 7:	Ca =	If t>Ds [(S / R) * (Ds + (EXP(-R * Dt) / R) -(EXP(R *(Ds - Dt)) / R)] / Dt * 1/1000

TABLE 7.3.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/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	
Groundwater	Groundwater	Tap Water	Ingestion	Chloroform	2.9E+00	ug/L	1.6E-05	mg/kg/day	3.1E-02	(mg/kg-day)$^{-1}$	4.9E-07	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	5.3E+00	ug/L	2.8E-05	mg/kg/day	5.4E-01	(mg/kg-day)$^{-1}$	1.5E-05	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	2.0E+00	ug/L	1.1E-05	mg/kg/day	5.9E-03	(mg/kg-day)$^{-1}$	6.3E-08	N/A	N/A	N/A	N/A	N/A
				Vinyl chloride	1.2E+00	ug/L	6.4E-06	mg/kg/day	7.2E-01	(mg/kg-day)$^{-1}$	4.6E-06	N/A	N/A	N/A	N/A	N/A
				bis(2-Ethylhexyl)phthalate	1.5E+01	ug/L	7.9E-05	mg/kg/day	1.4E-02	(mg/kg-day)$^{-1}$	1.1E-06	N/A	N/A	N/A	N/A	N/A
				2,4,6-Trinitrotoluene	6.5E+00	ug/L	3.4E-05	mg/kg/day	3.0E-02	(mg/kg-day)$^{-1}$	1.0E-06	N/A	N/A	N/A	N/A	N/A
				2-Amino-4,6-dinitrotoluene	8.9E+00	ug/L	4.7E-05	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				3,5-Dinitroaniline	8.8E-01	ug/L	4.7E-06	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				4-Amino-2,6-dinitrotoluene	9.9E+00	ug/L	5.3E-05	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				RDX	3.6E+01	ug/L	1.9E-04	mg/kg/day	1.1E-01	(mg/kg-day)$^{-1}$	2.1E-05	N/A	N/A	N/A	N/A	N/A
				Antimony-dissolved	2.0E+00	ug/L	1.1E-05	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				Chromium-dissolved	5.5E+00	ug/L	2.9E-05	mg/kg/day	5.0E-01	(mg/kg-day)$^{-1}$	1.5E-05	N/A	N/A	N/A	N/A	N/A
				Manganese-dissolved	3.2E+01	ug/L	1.7E-04	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								5.8E-05					N/A
			Dermal Absorption	Chloroform	2.9E+00	ug/L	9.6E-07	mg/kg/day	3.1E-02	(mg/kg-day)$^{-1}$	3.0E-08	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	5.3E+00	ug/L	1.1E-05	mg/kg/day	5.4E-01	(mg/kg-day)$^{-1}$	6.1E-06	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	2.0E+00	ug/L	1.2E-06	mg/kg/day	5.9E-03	(mg/kg-day)$^{-1}$	7.1E-09	N/A	N/A	N/A	N/A	N/A
				Vinyl chloride	1.2E+00	ug/L	2.2E-07	mg/kg/day	7.2E-01	(mg/kg-day)$^{-1}$	1.6E-07	N/A	N/A	N/A	N/A	N/A
				bis(2-Ethylhexyl)phthalate	1.5E+01	ug/L	8.2E-05	mg/kg/day	1.4E-02	(mg/kg-day)$^{-1}$	1.2E-06	N/A	N/A	N/A	N/A	N/A
				2,4,6-Trinitrotoluene	6.5E+00	ug/L	6.5E-07	mg/kg/day	3.0E-02	(mg/kg-day)$^{-1}$	2.0E-08	N/A	N/A	N/A	N/A	N/A
				2-Amino-4,6-dinitrotoluene	8.9E+00	ug/L	1.7E-06	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				3,5-Dinitroaniline	8.8E-01	ug/L	2.0E-07	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				4-Amino-2,6-dinitrotoluene	9.9E+00	ug/L	1.9E-06	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				RDX	3.6E+01	ug/L	1.2E-06	mg/kg/day	1.1E-01	(mg/kg-day)$^{-1}$	1.3E-07	N/A	N/A	N/A	N/A	N/A
				Antimony-dissolved	2.0E+00	ug/L	2.7E-08	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				Chromium-dissolved	5.5E+00	ug/L	1.5E-07	mg/kg/day	5.0E-01	(mg/kg-day)$^{-1}$	7.3E-08	N/A	N/A	N/A	N/A	N/A
				Manganese-dissolved	3.2E+01	ug/L	4.3E-07	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								7.7E-06					N/A
		Exposure Point Total									6.6E-05					N/A
	Exposure Medium Total										6.6E-05					N/A

TABLE 7.3.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 8, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/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	
Groundwater	Air	Water Vapors at Showerhead	Inhalation	Chloroform	1.4E-02	mg-hr-yr/m3-day	5.5E-06	mg/m^3	2.3E-05	$(\mu g/m^3)^{-1}$	1.3E-07	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	2.3E-02	mg-hr-yr/m3-day	8.9E-06	mg/m^3	5.9E-06	$(\mu g/m^3)^{-1}$	5.2E-08	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	9.7E-03	mg-hr-yr/m3-day	3.7E-06	mg/m^3	2.0E-06	$(\mu g/m^3)^{-1}$	7.4E-09	N/A	N/A	N/A	N/A	N/A
				Vinyl chloride	8.4E-03	mg-hr-yr/m3-day	3.2E-06	mg/m^3	4.4E-06	$(\mu g/m^3)^{-1}$	1.4E-08	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								2.0E-07					N/A
		Exposure Point Total									2.0E-07					N/A
	Air	Indoor Air	Inhalation	Tetrachloroethene	2.0E-04	$\mu g/m^3$	2.8E-05	mg/m^3	5.9E-06	$(ug/m3)^{-1}$	1.7E-07	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								1.7E-07					N/A
		Exposure Point Total									1.7E-07					N/A
	Exposure Medium Total										1.7E-07					N/A
Medium Total											6.6E-05					N/A
							Total of Receptor Risks Across All Media				6.6E-05	Total of Receptor Hazards Across All Media				N/A

Notes-
N/A = Not applicable.
DA_{event} for dermal exposure to groundwater calculated on Tables 7.1.CTE Supplement A and 7.2.CTE Supplement A
Inhalation exposure while showering calculated on Tables 7.1.CTE Supplement C and 7.2.CTE Supplement B

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Current/Future
Receptor Population: Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Air	Indoor Air	Tetrachloroethene	N/A	2.2E-08	N/A	2.2E-08	Neurological	N/A	4.0E-05	N/A	4.0E-05
			Chemical Total	N/A	2.2E-08	N/A	2.2E-08		N/A	4.0E-05	N/A	4.0E-05
		Exposure Point Total					2.2E-08					4.0E-05
	Exposure Medium Total						2.2E-08					4.0E-05
Medium Total						Receptor Risk Total	2.2E-08					4.0E-05
Receptor Total						Receptor Risk Total	2.2E-08				Receptor HI Total	4.0E-05

Total Neurological/Central Nervous System HI Across All Media = 4.0E-05

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			Chloroform	N/A	N/A	N/A	N/A	Liver	1.0E-02	N/A	9.2E-04	1.1E-02
			Tetrachloroethene	N/A	N/A	N/A	N/A	Liver, Body Weight	1.6E-02	N/A	9.6E-03	2.6E-02
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	N/A	N/A	N/A	Liver	1.1E-02	N/A	5.8E-04	1.2E-02
			bis(2-Ethylhexyl)phthalate	N/A	N/A	N/A	N/A	Liver	8.1E-02	N/A	1.3E-01	2.1E-01
			2,4,6-Trinitrotoluene	N/A	N/A	N/A	N/A	Liver	3.0E+00	N/A	8.6E-02	3.1E+00
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	1.0E+00	N/A	5.3E-02	1.1E+00
			3,5-Dinitroaniline	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	1.1E+00	N/A	5.9E-02	1.2E+00
			RDX	N/A	N/A	N/A	N/A	Prostate	9.4E-01	N/A	8.4E-03	9.4E-01
			Antimony-dissolved	N/A	N/A	N/A	N/A	Longevity, Blood	1.4E-01	N/A	4.8E-03	1.4E-01
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	2.9E-01	N/A	1.2E-01	4.1E-01
			Manganese-dissolved	N/A	N/A	N/A	N/A	Central Nervous System	1.5E-02	N/A	2.0E-03	1.7E-02
			Chemical Total	N/A	N/A	N/A	N/A		6.6E+00	0.0E+00	4.7E-01	7.1E+00
		Exposure Point Total					N/A					7.1E+00
	Exposure Medium Total			N/A	N/A	N/A	N/A					7.1E+00
	Air	Water Vapors at Showerhead										
			Chloroform	N/A	N/A	N/A	N/A	Liver	N/A	1.6E-03	N/A	1.6E-03
			Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	8.4E-04	N/A	8.4E-04
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	N/A	N/A	N/A	Liver	N/A	7.4E-04	N/A	7.4E-04
			Chemical Total	N/A	N/A	N/A	N/A		0.0E+00	3.2E-03	0.0E+00	3.2E-03
		Exposure Point Total					N/A					3.2E-03
		Indoor Air	Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	2.5E-04	N/A	2.5E-04
			Chemical Total	N/A	N/A	N/A	N/A		N/A	2.5E-04	N/A	2.5E-04
		Exposure Point Total					N/A					2.5E-04
	Exposure Medium Total						N/A					3.5E-03
Medium Total							N/A					7.1E+00
Receptor Total							N/A				Receptor HI Total	7.1E+00

HI - Hazard Index

Total Liver HI Across All Media = 3.4E+00

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

N/A - Not applicable

Total Body Weight HI Across All Media =	2.6E-02
Total Neurological/Central Nervous System HI Across All Media =	2.3E+00
Total Blood HI Across All Media =	2.4E+00
Total Biliary Tract HI Across All Media =	2.2E+00
Total Prostate HI Across All Media =	9.4E-01
Total Longevity HI Across All Media =	1.4E-01

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			Chloroform	N/A	N/A	N/A	N/A	Liver	2.4E-02	N/A	2.1E-03	2.6E-02
			Tetrachloroethene	N/A	N/A	N/A	N/A	Liver, Body Weight	3.7E-02	N/A	2.2E-02	5.9E-02
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	N/A	N/A	N/A	Liver	2.6E-02	N/A	1.4E-03	2.7E-02
			bis(2-Ethylhexyl)phthalate	N/A	N/A	N/A	N/A	Liver	1.9E-01	N/A	2.8E-01	4.7E-01
			2,4,6-Trinitrotoluene	N/A	N/A	N/A	N/A	Liver	7.0E+00	N/A	1.9E-01	7.2E+00
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	2.3E+00	N/A	1.2E-01	2.5E+00
			3,5-Dinitroaniline	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	2.6E+00	N/A	1.3E-01	2.8E+00
			RDX	N/A	N/A	N/A	N/A	Prostate	2.2E+00	N/A	1.9E-02	2.2E+00
			Antimony-dissolved	N/A	N/A	N/A	N/A	Longevity, Blood	3.2E-01	N/A	1.4E-02	3.3E-01
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	6.7E-01	N/A	3.5E-01	1.0E+00
			Manganese-dissolved	N/A	N/A	N/A	N/A	Central Nervous System	3.5E-02	N/A	5.8E-03	4.1E-02
							N/A					
			Chemical Total	N/A	N/A	N/A	N/A		1.5E+01	0.0E+00	1.1E+00	1.7E+01
		Exposure Point Total					N/A					1.7E+01
	Exposure Medium Total						N/A					1.7E+01
	Air	Water Vapors at Showerhead										
			Chloroform	N/A	N/A	N/A	N/A	Liver	N/A	4.5E-03	N/A	4.5E-03
			Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	2.3E-03	N/A	2.3E-03
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	N/A	N/A	N/A	Liver	N/A	2.1E-03	N/A	2.1E-03
							N/A					
			Chemical Total	N/A	N/A	N/A	N/A		0.0E+00	8.9E-03	0.0E+00	8.9E-03
		Exposure Point Total					N/A					8.9E-03
		Indoor Air	Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	7.2E-04	N/A	7.2E-04
			Chemical Total	N/A	N/A	N/A	N/A		N/A	7.2E-04	N/A	7.2E-04
		Exposure Point Total					N/A					7.2E-04
	Exposure Medium Total						N/A					7.2E-04
Medium Total							N/A					1.7E+01
Receptor Total							N/A				Receptor HI Total	1.7E+01

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

HI - Hazard Index
N/A - Not applicable

Total Liver HI Across All Media =	7.8E+00
Total Body Weight HI Across All Media =	5.9E-02
Total Neurological/Central Nervous System HI Across All Media =	5.2E+00
Total Blood HI Across All Media =	5.5E+00
Total Biliary Tract HI Across All Media =	5.2E+00
Total Prostate HI Across All Media =	2.2E+00
Total Longevity HI Across All Media =	3.3E-01

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			Chloroform	1.7E-06	N/A	1.5E-07	1.9E-06	Liver	N/A	N/A	N/A	N/A
			Tetrachloroethene	4.7E-05	N/A	2.8E-05	7.5E-05	Liver, Body Weight	N/A	N/A	N/A	N/A
			Trichloroethene	1.8E-07	N/A	2.9E-08	2.1E-07	N/A	N/A	N/A	N/A	N/A
			Vinyl chloride	1.3E-05	N/A	6.9E-07	1.4E-05	Liver	N/A	N/A	N/A	N/A
			bis(2-Ethylhexyl)phthalate	1.2E-05	N/A	1.9E-05	3.1E-05	Liver	N/A	N/A	N/A	N/A
			2,4,6-Trinitrotoluene	2.5E-05	N/A	6.9E-07	2.5E-05	Liver	N/A	N/A	N/A	N/A
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	0.0E+00	Central Nervous System, Blood, Biliary Tract	N/A	N/A	N/A	N/A
			3,5-Dinitroaniline	N/A	N/A	N/A	0.0E+00	N/A	N/A	N/A	N/A	N/A
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	0.0E+00	Central Nervous System, Blood, Biliary Tract	N/A	N/A	N/A	N/A
			RDX	1.7E-04	N/A	1.5E-06	1.7E-04	Prostate	N/A	N/A	N/A	N/A
			Antimony-dissolved	N/A	N/A	N/A	0.0E+00	Longevity, Blood	N/A	N/A	N/A	N/A
			Chromium-dissolved	2.3E-04	N/A	2.7E-06	2.4E-04	Not identified	N/A	N/A	N/A	N/A
			Manganese-dissolved	N/A	N/A	N/A	0.0E+00	Central Nervous System	N/A	N/A	N/A	N/A
												N/A
			Chemical Total	5.0E-04	0.0E+00	5.2E-05	5.5E-04		N/A	N/A	N/A	N/A
		Exposure Point Total					5.5E-04					N/A
	Exposure Medium Total						5.5E-04					N/A
	Air	Water Vapors at Showerhead										
			Chloroform	N/A	2.1E-06	N/A	2.1E-06	Liver	N/A	N/A	N/A	N/A
			Tetrachloroethene	N/A	7.8E-07	N/A	7.8E-07	Neurological	N/A	N/A	N/A	N/A
			Trichloroethene	N/A	1.0E-07	N/A	1.0E-07	N/A	N/A	N/A	N/A	N/A
			Vinyl chloride	N/A	1.9E-07	N/A	1.9E-07	Liver	N/A	N/A	N/A	N/A
			Chemical Total	0.0E+00	3.2E-06	0.0E+00	3.2E-06		N/A	N/A	N/A	N/A
		Exposure Point Total					3.2E-06					N/A

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Air	Indoor Air	Tetrachloroethene	N/A	4.9E-07	N/A	4.9E-07	Neurological	N/A	N/A	N/A	N/A N/A
			Chemical Total	N/A	4.9E-07	N/A	4.9E-07		N/A	N/A	N/A	N/A
		Exposure Point Total					4.9E-07					N/A
	Exposure Medium Total						3.7E-06					N/A
Medium Total							5.6E-04					N/A
Receptor Total							5.6E-04				Receptor HI Total	N/A

HI - Hazard Index

N/A - Not applicable

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Water in Excavation Pit	Chloroform	N/A	N/A	2.7E-09	2.7E-09	Liver	N/A	N/A	6.2E-04	6.2E-04
			Tetrachloroethene	N/A	N/A	3.7E-07	3.7E-07	Liver	N/A	N/A	4.8E-04	4.8E-04
			Trichloroethene	N/A	N/A	4.7E-10	4.7E-10	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	N/A	1.6E-08	1.6E-08	Liver	N/A	N/A	5.2E-04	5.2E-04
			bis(2-Ethylhexyl)phthalate	N/A	N/A	2.1E-07	2.1E-07	Liver	N/A	N/A	5.3E-02	5.3E-02
			2,4,6-Trinitrotoluene	N/A	N/A	8.4E-09	8.4E-09	Liver	N/A	N/A	3.9E-02	3.9E-02
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	0.0E+00	Central Nervous System, Blood, Biliary Tract	N/A	N/A	2.6E-02	2.6E-02
			3,5-Dinitroaniline	N/A	N/A	N/A	0.0E+00	N/A	N/A	N/A	N/A	0.0E+00
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	0.0E+00	Central Nervous System, Blood, Biliary Tract	N/A	N/A	2.9E-02	2.9E-02
			RDX	N/A	N/A	1.8E-08	1.8E-08	Prostate	N/A	N/A	3.9E-03	3.9E-03
			Antimony	N/A	N/A	N/A	0.0E+00	Longevity, Blood	N/A	N/A	7.4E-03	7.4E-03
			Arsenic	N/A	N/A	3.9E-08	3.9E-08	Skin, Vascular	N/A	N/A	6.0E-03	6.0E-03
			Chromium	N/A	N/A	1.0E-07	1.0E-07	Not identified	N/A	N/A	2.8E-02	2.8E-02
			Cobalt	N/A	N/A	N/A	0.0E+00	Thyroid	N/A	N/A	1.2E-04	1.2E-04
			Iron	N/A	N/A	N/A	0.0E+00	Gastrointestinal	N/A	N/A	1.7E-03	1.7E-03
			Manganese	N/A	N/A	N/A	0.0E+00	Central Nervous System	N/A	N/A	4.4E-03	4.4E-03
			Vanadium	N/A	N/A	N/A	0.0E+00	Lifetime	N/A	N/A	1.4E-02	1.4E-02
			Chemical Total	N/A	N/A	7.6E-07	7.6E-07		N/A	N/A	2.1E-01	2.1E-01
		Exposure Point Total					7.6E-07					2.1E-01
	Exposure Medium Total						7.6E-07					2.1E-01
	Air	Water Vapors in Excavation Pit	Chloroform	N/A	5.8E-09	N/A	5.8E-09	Liver	N/A	1.8E-04	N/A	1.8E-04
			Tetrachloroethene	N/A	2.0E-09	N/A	2.0E-09	Neurological	N/A	8.8E-05	N/A	8.8E-05
			Trichloroethene	N/A	2.6E-10	N/A	2.6E-10	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	5.0E-10	N/A	5.0E-10	Liver	N/A	8.0E-05	N/A	8.0E-05
			Chemical Total	0.0E+00	8.6E-09	0.0E+00	8.6E-09		0.0E+00	3.5E-04	0.0E+00	3.5E-04
		Exposure Point Total					8.6E-09					3.5E-04
	Exposure Medium Total						8.6E-09					3.5E-04
Medium Total							7.7E-07					2.1E-01
Receptor Total							7.7E-07				Receptor HI Total	2.1E-01

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

HI - Hazard Index
N/A - Not applicable

Total Liver HI Across All Media =	9.4E-02
Total Body Weight HI Across All Media =	4.8E-04
Total Neurological/Central Nervous System HI Across All Media =	6.0E-02
Total Blood HI Across All Media =	6.3E-02
Total Biliary Tract HI Across All Media =	5.5E-02
Total Prostate HI Across All Media =	3.9E-03
Total Skin HI Across All Media =	6.0E-03
Total Vascular HI Across All Media =	6.0E-03
Total Gastrointestinal HI Across All Media =	1.7E-03
Total Thyroid HI Across All Media =	1.2E-04
Total Lifetime HI Across All Media =	1.4E-02

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			Chloroform	N/A	N/A	N/A	N/A	Liver	3.8E-03	N/A	3.2E-04	4.1E-03
			Tetrachloroethene	N/A	N/A	N/A	N/A	Liver, Body Weight	6.8E-03	N/A	3.8E-03	1.1E-02
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	N/A	N/A	N/A	Liver	5.1E-03	N/A	2.5E-04	5.4E-03
			bis(2-Ethylhexyl)phthalate	N/A	N/A	N/A	N/A	Liver	9.6E-03	N/A	1.4E-02	2.3E-02
			2,4,6-Trinitrotoluene	N/A	N/A	N/A	N/A	Liver	1.7E-01	N/A	4.4E-03	1.7E-01
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	5.7E-02	N/A	2.8E-03	6.0E-02
			3,5-Dinitroaniline	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	6.4E-02	N/A	3.2E-03	6.7E-02
			RDX	N/A	N/A	N/A	N/A	Prostate	1.5E-01	N/A	1.3E-03	1.6E-01
			Antimony-dissolved	N/A	N/A	N/A	N/A	Longevity, Blood	6.4E-02	N/A	1.4E-03	6.5E-02
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	2.4E-02	N/A	6.1E-03	3.0E-02
			Manganese-dissolved	N/A	N/A	N/A	N/A	Central Nervous System	3.0E-03	N/A	2.4E-04	3.2E-03
			Chemical Total	N/A	N/A	N/A	N/A		5.6E-01	0.0E+00	3.8E-02	5.9E-01
		Exposure Point Total					N/A					5.9E-01
	Exposure Medium Total						N/A					5.9E-01

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Air	Water Vapors at Showerhead	Chloroform	N/A	N/A	N/A	N/A	Liver	N/A	4.9E-03	N/A	4.9E-03
			Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	2.9E-03	N/A	2.9E-03
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	N/A	N/A	N/A	Liver	N/A	2.8E-03	N/A	2.8E-03
			Chemical Total	N/A	N/A	N/A	N/A		0.0E+00	1.1E-02	0.0E+00	1.1E-02
		Exposure Point Total					N/A					1.1E-02
		Indoor Air	Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	4.8E-04	N/A	4.8E-04
			Chemical Total	N/A	N/A	N/A	N/A		N/A	4.8E-04	N/A	4.8E-04
		Exposure Point Total					N/A					4.8E-04
	Exposure Medium Total						N/A					1.1E-02
Medium Total							N/A					6.0E-01
Receptor Total							N/A				Receptor HI Total	6.0E-01

HI - Hazard Index
N/A - Not applicable

Total Liver HI Across All Media =	2.2E-01
Total Body Weight HI Across All Media =	1.1E-02
Total Neurological/Central Nervous System HI Across All Media =	1.3E-01
Total Blood HI Across All Media =	1.9E-01
Total Biliary Tract HI Across All Media =	1.3E-01
Total Prostate HI Across All Media =	1.6E-01
Total Longevity HI Across All Media =	6.5E-02

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			Chloroform	N/A	N/A	N/A	N/A	Liver	1.3E-02	N/A	6.3E-04	1.3E-02
			Tetrachloroethene	N/A	N/A	N/A	N/A	Liver, Body Weight	2.3E-02	N/A	7.5E-03	3.0E-02
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	N/A	N/A	N/A	Liver	1.7E-02	N/A	4.9E-04	1.8E-02
			bis(2-Ethylhexyl)phthalate	N/A	N/A	N/A	N/A	Liver	3.2E-02	N/A	2.7E-02	5.9E-02
			2,4,6-Trinitrotoluene	N/A	N/A	N/A	N/A	Liver	5.5E-01	N/A	8.7E-03	5.6E-01
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	1.9E-01	N/A	5.5E-03	2.0E-01
			3,5-Dinitroaniline	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	2.1E-01	N/A	6.2E-03	2.2E-01
			RDX	N/A	N/A	N/A	N/A	Prostate	5.1E-01	N/A	2.5E-03	5.2E-01
			Antimony-dissolved	N/A	N/A	N/A	N/A	Longevity, Blood	2.1E-01	N/A	3.1E-03	2.2E-01
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	7.9E-02	N/A	1.4E-02	9.3E-02
			Manganese-dissolved	N/A	N/A	N/A	N/A	Central Nervous System	9.9E-03	N/A	5.4E-04	1.0E-02
			Chemical Total	N/A	N/A	N/A	N/A		1.9E+00	0.0E+00	7.6E-02	1.9E+00
		Exposure Point Total					N/A					1.9E+00
	Exposure Medium Total						N/A					1.9E+00
	Air	Water Vapors at Showerhead										
			Chloroform	N/A	N/A	N/A	N/A	Liver	N/A	3.5E-04	N/A	3.5E-04
			Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	2.0E-04	N/A	2.0E-04
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Vinyl chloride	N/A	N/A	N/A	N/A	Liver	N/A	2.0E-04	N/A	2.0E-04
			Chemical Total	N/A	N/A	N/A	N/A		0.0E+00	7.5E-04	0.0E+00	7.5E-04
		Exposure Point Total					N/A					7.5E-04
		Indoor Air	Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	4.8E-07	N/A	4.8E-07
			Chemical Total	N/A	N/A	N/A	N/A		N/A	4.8E-07	N/A	4.8E-07
		Exposure Point Total					N/A					4.8E-07
	Exposure Medium Total						N/A					7.5E-04
Medium Total							N/A					1.9E+00
Receptor Total							N/A				Receptor HI Total	1.9E+00

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

HI - Hazard Index
N/A - Not applicable

Total Liver HI Across All Media =	6.8E-01
Total Body Weight HI Across All Media =	3.0E-02
Total Neurological/Central Nervous System HI Across All Media =	4.2E-01
Total Blood HI Across All Media =	6.3E-01
Total Biliary Tract HI Across All Media =	4.1E-01
Total Prostate HI Across All Media =	5.2E-01
Total Longevity HI Across All Media =	2.2E-01

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			Chloroform	4.9E-07	N/A	3.0E-08	5.1E-07	Liver	N/A	N/A	N/A	N/A
			Tetrachloroethene	1.5E-05	N/A	6.1E-06	2.1E-05	Liver, Body Weight	N/A	N/A	N/A	N/A
			Trichloroethene	6.3E-08	N/A	7.1E-09	7.0E-08	N/A	N/A	N/A	N/A	N/A
			Vinyl chloride	4.6E-06	N/A	1.6E-07	4.7E-06	Liver	N/A	N/A	N/A	N/A
			bis(2-Ethylhexyl)phthalate	1.1E-06	N/A	1.2E-06	2.3E-06	Liver	N/A	N/A	N/A	N/A
			2,4,6-Trinitrotoluene	1.0E-06	N/A	2.0E-08	1.0E-06	Liver	N/A	N/A	N/A	N/A
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	0.0E+00	Central Nervous System, Blood, Biliary Tract	N/A	N/A	N/A	N/A
			3,5-Dinitroaniline	N/A	N/A	N/A	0.0E+00	N/A	N/A	N/A	N/A	N/A
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	0.0E+00	Central Nervous System, Blood, Biliary Tract	N/A	N/A	N/A	N/A
			RDX	2.1E-05	N/A	1.3E-07	2.1E-05	Prostate	N/A	N/A	N/A	N/A
			Antimony-dissolved	N/A	N/A	N/A	0.0E+00	Longevity, Blood	N/A	N/A	N/A	N/A
			Chromium-dissolved	1.5E-05	N/A	7.3E-08	1.5E-05	Not identified	N/A	N/A	N/A	N/A
			Manganese-dissolved	N/A	N/A	N/A	0.0E+00	Central Nervous System	N/A	N/A	N/A	N/A
			Chemical Total	5.8E-05	0.0E+00	7.7E-06	6.6E-05		N/A	N/A	N/A	N/A
		Exposure Point Total					6.6E-05					N/A
	Exposure Medium Total						6.6E-05					N/A
	Air	Water Vapors at Showerhead										
			Chloroform	N/A	1.3E-07	N/A	1.3E-07	Liver	N/A	N/A	N/A	N/A
			Tetrachloroethene	N/A	5.2E-08	N/A	5.2E-08	Neurological	N/A	N/A	N/A	N/A
			Trichloroethene	N/A	7.4E-09	N/A	7.4E-09	N/A	N/A	N/A	N/A	N/A
			Vinyl chloride	N/A	1.4E-08	N/A	1.4E-08	Liver	N/A	N/A	N/A	N/A
			Chemical Total	0.0E+00	2.0E-07	0.0E+00	2.0E-07		N/A	N/A	N/A	N/A
		Exposure Point Total					2.0E-07					N/A
		Indoor Air	Tetrachloroethene	N/A	1.7E-07	N/A	1.7E-07	Neurological	N/A	N/A	N/A	N/A
			Chemical Total	N/A	1.7E-07	N/A	1.7E-07		N/A	N/A	N/A	N/A
		Exposure Point Total					1.7E-07					N/A
	Exposure Medium Total						3.7E-07					N/A
Medium Total							6.6E-05					N/A
Receptor Total							6.6E-05				Receptor HI Total	N/A

HI - Hazard Index

N/A - Not applicable

TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			bis(2-Ethylhexyl)phthalate	N/A	N/A	N/A	N/A	Liver	8.1E-02	N/A	1.3E-01	2.1E-01
			2,4,6-Trinitrotoluene	N/A	N/A	N/A	N/A	Liver	3.0E+00	N/A	8.6E-02	3.1E+00
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	1.0E+00	N/A	5.3E-02	1.1E+00
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	1.1E+00	N/A	5.9E-02	1.2E+00
			RDX	N/A	N/A	N/A	N/A	Prostate	9.4E-01	N/A	8.4E-03	9.4E-01
			Antimony-dissolved	N/A	N/A	N/A	N/A	Longevity, Blood	1.4E-01	N/A	4.8E-03	1.4E-01
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	2.9E-01	N/A	1.2E-01	4.1E-01
			Chemical Total	N/A	N/A	N/A	N/A		6.6E+00	0.0E+00	4.6E-01	7.0E+00
		Exposure Point Total					N/A					7.0E+00
	Exposure Medium Total						N/A					7.0E+00
Medium Total							N/A					7.0E+00
Receptor Total							N/A				Receptor HI Total	7.0E+00

HI - Hazard Index
N/A - Not applicable

Total Liver HI Across All Media =	3.3E+00
Total Neurological/Central Nervous System HI Across All Media =	2.2E+00
Total Blood HI Across All Media =	2.4E+00
Total Biliary Tract HI Across All Media =	2.2E+00
Total Prostate HI Across All Media =	9.4E-01
Total Longevity HI Across All Media =	1.4E-01

TABLE 10.2.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			bis(2-Ethylhexyl)phthalate	N/A	N/A	N/A	N/A	Liver	1.9E-01	N/A	2.8E-01	4.7E-01
			2,4,6-Trinitrotoluene	N/A	N/A	N/A	N/A	Liver	7.0E+00	N/A	1.9E-01	7.2E+00
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	2.3E+00	N/A	1.2E-01	2.5E+00
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	2.6E+00	N/A	1.3E-01	2.8E+00
			RDX	N/A	N/A	N/A	N/A	Prostate	2.2E+00	N/A	1.9E-02	2.2E+00
			Antimony-dissolved	N/A	N/A	N/A	N/A	Longevity, Blood	3.2E-01	N/A	1.4E-02	3.3E-01
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	6.7E-01	N/A	3.5E-01	1.0E+00
							N/A					
			Chemical Total	N/A	N/A	N/A	N/A		1.5E+01	0.0E+00	1.1E+00	1.6E+01
		Exposure Point Total					N/A					1.6E+01
	Exposure Medium Total						N/A					1.6E+01
		Indoor Air	Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	7.2E-04	N/A	7.2E-04
			Chemical Total	N/A	N/A	N/A	N/A		N/A	7.2E-04	N/A	7.2E-04
		Exposure Point Total					N/A					7.2E-04
	Exposure Medium Total						#REF!					7.2E-04
Medium Total							N/A					1.6E+01
Receptor Total							N/A				Receptor HI Total	1.6E+01

HI - Hazard Index

N/A - Not applicable

Total Liver HI Across All Media =	7.7E+00
Total Neurological/Central Nervous System HI Across All Media =	5.2E+00
Total Blood HI Across All Media =	5.5E+00
Total Biliary Tract HI Across All Media =	5.2E+00
Total Prostate HI Across All Media =	2.2E+00
Total Longevity HI Across All Media =	3.3E-01

TABLE 10.3.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			Chloroform	1.7E-06	N/A	1.5E-07	1.9E-06	Liver	N/A	N/A	N/A	N/A
			Tetrachloroethene	4.7E-05	N/A	2.8E-05	7.5E-05	Liver, Body Weight	N/A	N/A	N/A	N/A
			Vinyl chloride	1.3E-05	N/A	6.9E-07	1.4E-05	Liver	N/A	N/A	N/A	N/A
			bis(2-Ethylhexyl)phthalate	1.2E-05	N/A	1.9E-05	3.1E-05	Liver	N/A	N/A	N/A	N/A
			2,4,6-Trinitrotoluene	2.5E-05	N/A	6.9E-07	2.5E-05	Liver	N/A	N/A	N/A	N/A
			RDX	1.7E-04	N/A	1.5E-06	1.7E-04	Prostate	N/A	N/A	N/A	N/A
			Chromium-dissolved	2.3E-04	N/A	2.7E-06	2.4E-04	Not identified	N/A	N/A	N/A	N/A
												N/A
			Chemical Total	5.0E-04	0.0E+00	5.2E-05	5.5E-04		N/A	N/A	N/A	N/A
		Exposure Point Total					5.5E-04					N/A
	Exposure Medium Total						5.5E-04					N/A
Medium Total							5.5E-04					N/A
Receptor Total							5.5E-04				Receptor HI Total	N/A

HI - Hazard Index

N/A - Not applicable

TABLE 10.1.CTE
RISK SUMMARY
CENTRAL TENDENCY EXPOSURE
Site 8, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water	2,4,6-Trinitrotoluene	N/A	N/A	N/A	N/A	Liver	5.5E-01	N/A	8.7E-03	5.6E-01
			2-Amino-4,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	1.9E-01	N/A	5.5E-03	2.0E-01
			4-Amino-2,6-dinitrotoluene	N/A	N/A	N/A	N/A	Central Nervous System, Blood, Biliary Tract	2.1E-01	N/A	6.2E-03	2.2E-01
			RDX	N/A	N/A	N/A	N/A	Prostate	5.1E-01	N/A	2.5E-03	5.2E-01
			Antimony-dissolved	N/A	N/A	N/A	N/A	Longevity, Blood	2.1E-01	N/A	3.1E-03	2.2E-01
			Chemical Total	N/A	N/A	N/A	N/A		1.7E+00	0.0E+00	2.6E-02	1.7E+00
		Exposure Point Total					N/A					1.7E+00
	Exposure Medium Total						N/A					1.7E+00
		Exposure Point Total					N/A					1.7E+00
		Indoor Air	Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	4.8E-07	N/A	4.8E-07
			Chemical Total	N/A	N/A	N/A	N/A		N/A	4.8E-07	N/A	4.8E-07
		Exposure Point Total					N/A					4.8E-07
	Exposure Medium Total						N/A					1.7E+00
Medium Total							N/A					3.4E+00
Receptor Total							N/A				Receptor HI Total	3.4E+00

HI - Hazard Index

N/A - Not applicable

Total Liver HI Across All Media =	5.6E-01
Total Neurological/Central Nervous System HI Across All Media =	4.1E-01
Total Blood HI Across All Media =	6.3E-01
Total Biliary Tract HI Across All Media =	4.1E-01
Total Prostate HI Across All Media =	5.2E-01
Total Longevity HI Across All Media =	2.2E-01

Table 11.1
The J-E Model Input Parameter Values Used for Modeling, Including Uncertainty Evaluation Input Parameters
Site 8, NWS Yorktown, Yorktown, VA

Parameter	Units	Relative Model Sensitivity to Input Parameter	Practical Range	EPA's Default Values	Model Value	Relative Uncertainty	Source
Groundwater concentration	ug/L	High	User-defined	NA	User-defined	Low	Yorktown Database
Average groundwater temperature	C		User-defined	NA	19.8	Low	November 2007 Sampling Event
Depth below grade to bottom of enclosed floor space	cm	High	User-defined	15 (slab-on-grade)	15	Moderate	J-E Model documentation
Depth below grade to water table	cm	High	User-defined	NA	299*	Low	Monitoring Well YS8-GW03
SCS soil types	--	Moderate/High	User-defined	NA	Silt	Moderate	monitoring well boring logs
Soil vapor permeability	cm^2	High	10E-6 to 10E-12	10E-8	Esimated base on soil type	High	J-E Model documentation
Soil dry bulk density	g/cm^3	Low	1.25 - 1.75	1.38	1.35	Low	J-E Model documentation
Soil total porosity	--	Moderate	0.34 - 0.53	0.481	0.489	Low	J-E Model documentation
Soil-water filled porosity	cm^3/cm^3	High	0.04 - 0.33	0.216	0.167	High	J-E Model documentation
Enclosed space floor thickness	cm	Low	User-defined	10	10	High	10 cm used as a conservative value
Soil-building pressure differential	$g\text{-}cm\text{-}s^2$	High	0 – 200	40	40	High	J-E Model documentation (Now used in model to calculate Qsoil)
Building: Enclosed Floor Space Length x Width x Height (Industrial Scenario)	cm	Moderate	User-defined	1000 x 1000 x 244	110 x 50 x 15	Low	Approximate dimensions of Building 456
Building: Enclosed Floor Space Length x Width x Height (Residential Scenario)	cm	Moderate	User-defined	1000 x 1000 x 244	1000 x 1000 x 244	Low	J-E Model documentation
Floor-wall seam crack width	cm	Moderate	0.05 - 1.0	0.1	0.1	High	J-E Model documentation
Indoor air exchange rate (Industrial Scenario)	1/h	Moderate	0.18 - 1.26	0.25	0.56	Moderate	Calculated using NJDEP, 2007 methodology
Indoor air exchange rate (Residential Scenario)	1/h	Moderate	0.18 - 1.26	0.25	0.25	Moderate	J-E Model documentation

Notes:

C = Degrees Celsius cm = Centimeter

cm^2 = Square centimeter g/cm^3 = Grams per cubic centimeter cm^3/cm^3 = Cubic centimeter times cubic centimeter
$g\text{-}cm\text{-}s^2$ = Grams minus centimeters minus seconds squared m^3 = Cubic meters 1/h = One per hour
NA = Not applicable J-E = Johnson-Ettinger Model SCS = U.S. Soil Conservation Service
* For conservancy the shallowest depth to groundwater from the most recent groundwater sampling event was used.

Table 11.1
The J-E Model Input Parameter Values Used for Modeling
Site 8, NWS Yorktown, Yorktown, VA

Model Input Example for the Industrial Scenario:

Average soil/ groundwater temperature, T_S (°C)	Depth below grade to bottom of enclosed space floor, L_F (cm)	Depth below grade to water table L_{WT} (cm)	Totals must add up to value of L_{WT} (cell G28): Thickness of soil stratum A, h_A (cm)	Thickness of soil stratum B, Enter value or (Enter value or (h_B (cm)	Thickness of soil stratum C, h_C (cm)	Soil stratum directly above water table, nter A, B, or	SCS soil type directly above water table	Soil stratum A SCS soil type sed to estima soil vapor permeability)	OR	User-defined stratum A soil vapor permeability, k_v (cm^2)
19.8	15	299	299	0	0	A	SI	SI		

Stratum A SCS soil type	Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	Stratum A soil total porosity, n^A (unitless)	Stratum A soil water-fille porosity, θ_w^A (cm^3/cm^3)	Stratum B SCS soil type	Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	Stratum B soil total porosity, n^B (unitless)	Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	Stratum C SCS soil type	Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	Stratum C soil total porosity, n^C (unitless)	Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
SI	1.35	0.489	0.167								

Enclosed space floor thickness, L_{crack} (cm)	Soil-bldg. pressure differential, ΔP (g/cm-s^2)	Enclosed space floor length, L_B (cm)	Enclosed space floor width, W_B (cm)	Enclosed space height, H_B (cm)	Floor-wall seam crack width, w (cm)	Indoor air exchange rate, ER (1/h)	Average vapor flow rate into bldg. OR Leave blank to calculate Qsoil (L/m)
10	40	3353	1524	457	0.1	0.56	12.192

Model Input Example for the Residential Scenario:

Average soil/ groundwater temperature, T_S (°C)	Depth below grade to bottom of enclosed space floor, L_F (cm)	Depth below grade to water table L_{WT} (cm)	Totals must add up to value of L_{WT} (cell G28): Thickness of soil stratum A, h_A (cm)	Thickness of soil stratum B, Enter value or (Enter value or (h_B (cm)	Thickness of soil stratum C, h_C (cm)	Soil stratum directly above water table, nter A, B, or	SCS soil type directly above water table	Soil stratum A SCS soil type sed to estima soil vapor permeability)	OR	User-defined stratum A soil vapor permeability, k_v (cm^2)
19.8	15	299	299	0	0	A	SI	SI		

Stratum A SCS soil type	Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	Stratum A soil total porosity, n^A (unitless)	Stratum A soil water-fille porosity, θ_w^A (cm^3/cm^3)	Stratum B SCS soil type	Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	Stratum B soil total porosity, n^B (unitless)	Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	Stratum C SCS soil type	Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	Stratum C soil total porosity, n^C (unitless)	Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
SI	1.35	0.489	0.167								

Enclosed space floor thickness, L_{crack} (cm)	Soil-bldg. pressure differential, ΔP (g/cm-s^2)	Enclosed space floor length, L_B (cm)	Enclosed space floor width, W_B (cm)	Enclosed space height, H_B (cm)	Floor-wall seam crack width, w (cm)	Indoor air exchange rate, ER (1/h)	Average vapor flow rate into bldg. OR Leave blank to calculate Qsoil (L/m)
15	40	1000	1000	244	0.1	0.25	5

Table 11.2

Johnson and Ettinger Groundwater Version 3.1 Advanced Model - Example and Output Values for Industrial Scenario

Site 8, NWS Yorktown, Yorktown, VA

CASRN	Chemical	Groundwater Concentration (ug/L)	Diffusivity in air, Da (cm2/s)	Diffusivity in water, Dw (cm2/s)	Henry's law constant at reference temperature, H (atm-m3/mol)	Henry's law constant reference temperature, TR (oC)	Enthalpy of vaporization at the normal boiling point, DHv,b (cal/mol)	Normal boiling point, TB (oK)	Critical temperature, TC (oK)	Organic carbon partition coefficient, Koc (cm3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF (mg/m3)-1	Reference conc., RfC (mg/m3)
Indoor Worker (Industrial Worker) Scenario													
127-18-4	Tetrachloroethene	7.4	5.0E-02	9.5E-06	1.8E-02	2.4E+01	8.3E+03	3.9E+02	6.2E+02	9.5E+01	2.1E+02	5.9E-06	2.7E-01

CASRN	Chemical	Exposure duration, t (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
Indoor Worker (Industrial Worker) Scenario															
127-18-4	Tetrachloroethene	7.9E+08	2.8E+02	3.2E-01	ERROR	ERROR	2.7E-01	6.9E-09	8.3E-01	5.7E-09	1.6E+02	4.9E-01	1.1E-01	3.8E-01	9.8E+03

CASRN	Chemical	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. groundwate temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
Indoor Worker (Industrial Worker) Scenario															
127-18-4	Tetrachloroethene	3.6E+05	5.3E+06	1.9E-04	1.5E+01	9.5E+03	1.4E-02	5.9E-01	1.8E-04	4.8E-03	0.0E+00	0.0E+00	1.3E-04	2.2E-04	2.8E+02

CASRN	Chemical	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	**Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)**
Indoor Worker (Industrial Worker) Scenario										
127-18-4	Tetrachloroethene	1.5E+01	4.3E+03	1.0E-01	2.0E+02	4.8E-03	9.8E+02	2.3E+188	1.1E-05	**4.7E-02**

Table 11.3

Johnson and Ettinger Groundwater Version 3.1 Advanced Model - Example and Output Values for Residential Scenario

Site 8, NWS Yorktown, Yorktown, VA

CASRN	Chemical	Groundwater Concentration (ug/L)	Diffusivity in air, Da (cm2/s)	Diffusivity in water, Dw (cm2/s)	Henry's law constant at reference temperature, H (atm-m3/mol)	Henry's law constant reference temperature, TR (oC)	Enthalpy of vaporization at the normal boiling point, DHv,b (cal/mol)	Normal boiling point, TB (oK)	Critical temperature, TC (oK)	Organic carbon partition coefficient, Koc (cm3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF (mg/m3)-1	Reference conc., RfC (mg/m3)
Residential Scenario													
127-18-4	Tetrachloroethene	7.4	5.0E-02	9.5E-06	1.8E-02	2.4E+01	8.3E+03	3.9E+02	6.2E+02	9.5E+01	2.1E+02	5.9E-06	2.7E-01

CASRN	Chemical	Exposure duration, t (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
Residential Scenario															
127-18-4	Tetrachloroethene	9.5E+08	2.8E+02	3.2E-01	ERROR	ERROR	2.7E-01	6.9E-09	8.3E-01	5.7E-09	1.6E+02	4.9E-01	1.1E-01	3.8E-01	4.0E+03

CASRN	Chemical	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. groundwate temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
Residential Scenario															
127-18-4	Tetrachloroethene	1.7E+04	1.1E+06	3.8E-04	1.5E+01	9.5E+03	1.4E-02	5.9E-01	1.8E-04	4.8E-03	0.0E+00	0.0E+00	1.3E-04	2.2E-04	2.8E+02

CASRN	Chemical	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	**Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)**
Residential Scenario										
127-18-4	Tetrachloroethene	1.5E+01	4.3E+03	1.0E-01	8.3E+01	4.8E-03	4.0E+02	2.4E+188	4.7E-05	**2.0E-01**

Table 12
Comparison of Non-Detected Chemicals to Regional Screening Levels
Groundwater at Site 8, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening Toxicity Value ug/L	[1]	Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
71-55-6	1,1,1-Trichloroethane	10 - 10	1.0E+01	9.1E+02	N	NO	DLBSL
79-34-5	1,1,2,2-Tetrachloroethane	10 - 10	1.0E+01	6.7E-02	C	YES	DLASL
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	10 - 10	1.0E+01	5.9E+03	N	NO	DLBSL
79-00-5	1,1,2-Trichloroethane	10 - 10	1.0E+01	2.4E-01	C	YES	DLASL
75-34-3	1,1-Dichloroethane	10 - 10	1.0E+01	2.4E+00	C	YES	DLASL
75-35-4	1,1-Dichloroethene	10 - 10	1.0E+01	3.4E+01	N	NO	DLBSL
120-82-1	1,2,4-Trichlorobenzene	10 - 10	1.0E+01	4.1E-01	C**	YES	DLASL
96-12-8	1,2-Dibromo-3-chloropropane	10 - 10	1.0E+01	3.2E-04	C	YES	DLASL
106-93-4	1,2-Dibromoethane	10 - 10	1.0E+01	6.5E-03	C	YES	DLASL
95-50-1	1,2-Dichlorobenzene	10 - 10	1.0E+01	3.7E+01	N	NO	DLBSL
107-06-2	1,2-Dichloroethane	10 - 10	1.0E+01	1.5E-01	C	YES	DLASL
78-87-5	1,2-Dichloropropane	10 - 10	1.0E+01	3.9E-01	C*	YES	DLASL
541-73-1	1,3-Dichlorobenzene	10 - 10	1.0E+01	4.3E-01	C	YES	DLASL
106-46-7	1,4-Dichlorobenzene	10 - 10	1.0E+01	4.3E-01	C	YES	DLASL
591-78-6	2-Hexanone	10 - 10	1.0E+01	4.7E+00	N	YES	DLASL
108-10-1	4-Methyl-2-pentanone	10 - 10	1.0E+01	2.0E+02	N	NO	DLBSL
67-64-1	Acetone	10 - 10	1.0E+01	2.2E+03	N	NO	DLBSL
71-43-2	Benzene	10 - 10	1.0E+01	4.1E-01	C	YES	DLASL
75-27-4	Bromodichloromethane	10 - 10	1.0E+01	1.2E-01	C	YES	DLASL
75-25-2	Bromoform	10 - 10	1.0E+01	8.5E+00	C*	YES	DLASL
74-83-9	Bromomethane	10 - 10	1.0E+01	8.7E-01	N	YES	DLASL
75-15-0	Carbon disulfide	10 - 10	1.0E+01	1.0E+02	N	NO	DLBSL
56-23-5	Carbon tetrachloride	10 - 10	1.0E+01	2.0E-01	C	YES	DLASL
108-90-7	Chlorobenzene	10 - 10	1.0E+01	9.1E+00	N	YES	DLASL
75-00-3	Chloroethane	10 - 10	1.0E+01	2.1E+03	N	NO	DLBSL
74-87-3	Chloromethane	10 - 10	1.0E+01	1.9E+01	N	NO	DLBSL
156-59-2	cis-1,2-Dichloroethene	10 - 10	1.0E+01	7.3E+00	N	YES	DLASL
10061-01-5	cis-1,3-Dichloropropene	10 - 10	1.0E+01	4.3E-01	C*	YES	DLASL
110-82-7	Cyclohexane	10 - 10	1.0E+01	1.3E+03	N	NO	DLBSL
124-48-1	Dibromochloromethane	10 - 10	1.0E+01	1.5E-01	C	YES	DLASL
75-71-8	Dichlorodifluoromethane (Freon-12)	10 - 10	1.0E+01	3.9E+01	N	NO	DLBSL
100-41-4	Ethylbenzene	10 - 10	1.0E+01	1.5E+00	C	YES	DLASL
98-82-8	Isopropylbenzene	10 - 10	1.0E+01	6.8E+01	N	NO	DLBSL
79-20-9	Methyl acetate	10 - 10	1.0E+01	3.7E+03	N	NO	DLBSL
108-87-2	Methylcyclohexane	10 - 10	1.0E+01	NA		NO	NTX
75-09-2	Methylene chloride	10 - 10	1.0E+01	4.8E+00	C	YES	DLASL
1634-04-4	Methyl-tert-butyl ether (MTBE)	10 - 10	1.0E+01	1.2E+01	C	NO	DLBSL
100-42-5	Styrene	10 - 10	1.0E+01	1.6E+02	N	NO	DLBSL
156-60-5	trans-1,2-Dichloroethene	10 - 10	1.0E+01	1.1E+01	N	NO	DLBSL
10061-02-6	trans-1,3-Dichloropropene	10 - 10	1.0E+01	4.3E-01	C*	YES	DLASL
75-69-4	Trichlorofluoromethane(Freon-11)	10 - 10	1.0E+01	1.3E+02	N	NO	DLBSL
1330-20-7	Xylene, total	10 - 10	1.0E+01	2.0E+01	N	NO	DLBSL
92-52-4	1,1-Biphenyl	9.4 - 9.7	9.7E+00	1.8E+02	N	NO	DLBSL
108-60-1	2,2'-Oxybis(1-chloropropane)	9.4 - 9.7	9.7E+00	3.2E-01	C	YES	DLASL
95-95-4	2,4,5-Trichlorophenol	9.4 - 9.7	9.7E+00	3.7E+02	N	NO	DLBSL
88-06-2	2,4,6-Trichlorophenol	9.4 - 9.7	9.7E+00	3.7E+00	C**	YES	DLASL

Table 12
Comparison of Non-Detected Chemicals to Regional Screening Levels
Groundwater at Site 8, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening Toxicity Value ug/L	[1]	Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
120-83-2	2,4-Dichlorophenol	9.4 - 9.7	9.7E+00	1.1E+01	N	NO	DLBSL
105-67-9	2,4-Dimethylphenol	9.4 - 9.7	9.7E+00	7.3E+01	N	NO	DLBSL
51-28-5	2,4-Dinitrophenol	47 - 49	4.9E+01	7.3E+00	N	YES	DLASL
121-14-2	2,4-Dinitrotoluene	0.14 - 3.6	3.6E+00	2.2E-01	C	YES	DLASL
606-20-2	2,6-Dinitrotoluene	0.14 - 3.6	3.6E+00	3.7E+00	N	NO	DLBSL
91-58-7	2-Chloronaphthalene	9.4 - 9.7	9.7E+00	2.9E+02	N	NO	DLBSL
95-57-8	2-Chlorophenol	9.4 - 9.7	9.7E+00	1.8E+01	N	NO	DLBSL
95-48-7	2-Methylphenol	9.4 - 9.7	9.7E+00	1.8E+02	N	NO	DLBSL
88-74-4	2-Nitroaniline	47 - 49	4.9E+01	3.7E+01	N	YES	DLASL
88-75-5	2-Nitrophenol	9.4 - 9.7	9.7E+00	1.8E+01	N	NO	DLBSL
91-94-1	3,3'-Dichlorobenzidine	19 - 19	1.9E+01	1.5E-01	C	YES	DLASL
99-09-2	3-Nitroaniline	47 - 49	4.9E+01	3.7E+01	N	YES	DLASL
534-52-1	4,6-Dinitro-2-methylphenol	47 - 49	4.9E+01	2.9E-01	N	YES	DLASL
101-55-3	4-Bromophenyl-phenylether	9.4 - 9.7	9.7E+00	NA		NO	NTX
59-50-7	4-Chloro-3-methylphenol	9.4 - 9.7	9.7E+00	3.7E+02	N	NO	DLBSL
106-47-8	4-Chloroaniline	19 - 19	1.9E+01	3.4E-01	C	YES	DLASL
7005-72-3	4-Chlorophenyl-phenylether	9.4 - 9.7	9.7E+00	1.8E+01	N	NO	DLBSL
106-44-5	4-Methylphenol	9.4 - 9.7	9.7E+00	1.8E+01	N	NO	DLBSL
100-01-6	4-Nitroaniline	47 - 49	4.9E+01	3.4E+00	C*	YES	DLASL
100-02-7	4-Nitrophenol	47 - 49	4.9E+01	1.2E-01	C	YES	DLASL
83-32-9	Acenaphthene	9.4 - 9.7	9.7E+00	2.2E+02	N	NO	DLBSL
208-96-8	Acenaphthylene	9.4 - 9.7	9.7E+00	2.2E+02	N	NO	DLBSL
98-86-2	Acetophenone	9.4 - 9.7	9.7E+00	3.7E+02	N	NO	DLBSL
120-12-7	Anthracene	9.4 - 9.7	9.7E+00	1.1E+03	N	NO	DLBSL
1912-24-9	Atrazine	9.4 - 9.7	9.7E+00	2.9E-01	C	YES	DLASL
100-52-7	Benzaldehyde	9.4 - 9.7	9.7E+00	3.7E+02	N	NO	DLBSL
56-55-3	Benzo(a)anthracene	9.4 - 9.7	9.7E+00	2.9E-02	C	YES	DLASL
50-32-8	Benzo(a)pyrene	9.4 - 9.7	9.7E+00	2.9E-03	C	YES	DLASL
205-99-2	Benzo(b)fluoranthene	9.4 - 9.7	9.7E+00	2.9E-02	C	YES	DLASL
191-24-2	Benzo(g,h,i)perylene	9.4 - 9.7	9.7E+00	1.1E+02	N	NO	DLBSL
207-08-9	Benzo(k)fluoranthene	9.4 - 9.7	9.7E+00	2.9E-01	C	YES	DLASL
111-91-1	bis(2-Chloroethoxy)methane	9.4 - 9.7	9.7E+00	1.1E+01	N	NO	DLBSL
111-44-4	bis(2-Chloroethyl)ether	9.4 - 9.7	9.7E+00	1.2E-02	C	YES	DLASL
85-68-7	Butylbenzylphthalate	9.4 - 9.7	9.7E+00	3.5E+01	C	NO	DLBSL
105-60-2	Caprolactam	9.4 - 9.7	9.7E+00	1.8E+03	N	NO	DLBSL
86-74-8	Carbazole	9.4 - 9.7	9.7E+00	NA		NO	NTX
218-01-9	Chrysene	9.4 - 9.7	9.7E+00	2.9E+00	C	YES	DLASL
53-70-3	Dibenz(a,h)anthracene	9.4 - 9.7	9.7E+00	2.9E-03	C	YES	DLASL
132-64-9	Dibenzofuran	9.4 - 9.7	9.7E+00	3.7E+00	N	YES	DLASL
84-66-2	Diethylphthalate	9.4 - 9.7	9.7E+00	2.9E+03	N	NO	DLBSL
131-11-3	Dimethyl phthalate	9.4 - 9.7	9.7E+00	NA		NO	NTX
84-74-2	Di-n-butylphthalate	9.4 - 9.7	9.7E+00	3.7E+02	N	NO	DLBSL
117-84-0	Di-n-octylphthalate	9.4 - 9.7	9.7E+00	4.8E+00	C	YES	DLASL
206-44-0	Fluoranthene	9.4 - 9.7	9.7E+00	1.5E+02	N	NO	DLBSL
86-73-7	Fluorene	9.4 - 9.7	9.7E+00	1.5E+02	N	NO	DLBSL
118-74-1	Hexachlorobenzene	9.4 - 9.7	9.7E+00	4.2E-02	C	YES	DLASL
87-68-3	Hexachlorobutadiene	9.4 - 9.7	9.7E+00	8.6E-01	C*	YES	DLASL

Table 12
Comparison of Non-Detected Chemicals to Regional Screening Levels
Groundwater at Site 8, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening Toxicity Value ug/L	[1]	Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
77-47-4	Hexachlorocyclopentadiene	9.4 - 9.7	9.7E+00	2.2E+01	N	NO	DLBSL
67-72-1	Hexachloroethane	9.4 - 9.7	9.7E+00	3.7E+00	C**	YES	DLASL
193-39-5	Indeno(1,2,3-cd)pyrene	9.4 - 9.7	9.7E+00	2.9E-02	C	YES	DLASL
78-59-1	Isophorone	9.4 - 9.7	9.7E+00	7.1E+01	C	NO	DLBSL
91-20-3	Naphthalene	9.4 - 9.7	9.7E+00	1.4E-01	C*	YES	DLASL
621-64-7	n-Nitroso-di-n-propylamine	9.4 - 9.7	9.7E+00	9.6E-03	C	YES	DLASL
86-30-6	n-Nitrosodiphenylamine	9.4 - 9.7	9.7E+00	1.4E+01	C	NO	DLBSL
98-95-3	Nitrobenzene	0.14 - 3.6	3.6E+00	1.2E-01	C	YES	DLASL
87-86-5	Pentachlorophenol	47 - 49	4.9E+01	1.7E-01	C	YES	DLASL
85-01-8	Phenanthrene	9.4 - 9.7	9.7E+00	1.1E+03	N	NO	DLBSL
108-95-2	Phenol	9.4 - 9.7	9.7E+00	1.1E+03	N	NO	DLBSL
129-00-0	Pyrene	9.4 - 9.7	9.7E+00	1.1E+02	N	NO	DLBSL
12674-11-2	Aroclor-1016	0.94 - 0.98	9.8E-01	2.6E-01	C**	YES	DLASL
11104-28-2	Aroclor-1221	1.9 - 2	2.0E+00	6.8E-03	C	YES	DLASL
11141-16-5	Aroclor-1232	0.94 - 0.98	9.8E-01	6.8E-03	C	YES	DLASL
53469-21-9	Aroclor-1242	0.94 - 0.98	9.8E-01	3.4E-02	C	YES	DLASL
12672-29-6	Aroclor-1248	0.94 - 0.98	9.8E-01	3.4E-02	C	YES	DLASL
11097-69-1	Aroclor-1254	0.94 - 0.98	9.8E-01	3.4E-02	C*	YES	DLASL
11096-82-5	Aroclor-1260	0.94 - 0.98	9.8E-01	3.4E-02	C	YES	DLASL
99-65-0	1,3-Dinitrobenzene	0.14 - 3.6	3.6E+00	3.7E-01	N	YES	DLASL
99-08-1	3-Nitrotoluene	0.46 - 12	1.2E+01	3.7E-01	N	YES	DLASL
99-99-0	4-Nitrotoluene	0.46 - 12	1.2E+01	4.2E+00	C*	YES	DLASL
55-63-0	Nitroglycerin	0.91 - 24	2.4E+01	3.7E-01	N	YES	DLASL
556-88-7	Nitroguanidine	20 - 20	2.0E+01	3.7E+02	N	NO	DLBSL
78-11-5	PETN	0.91 - 24	2.4E+01	NA		NO	NTX
479-45-8	Tetryl	0.14 - 3.6	3.6E+00	1.5E+01	N	NO	DLBSL
7440-43-9	Cadmium	5 - 5	5.0E+00	1.8E+00	N	YES	DLASL
57-12-5	Cyanide	10 - 10	1.0E+01	7.3E+01	N	NO	DLBSL
7439-97-6	Mercury	0.2 - 0.2	2.0E-01	1.1E+00	N	NO	DLBSL
7782-49-2	Selenium	35 - 35	3.5E+01	1.8E+01	N	YES	DLASL
7440-22-4	Silver	10 - 10	1.0E+01	1.8E+01	N	NO	DLBSL
7440-28-0	Thallium	25 - 25	2.5E+01	NA		NO	NTX
7440-38-2	Arsenic, Dissolved	10 - 10	1.0E+01	4.5E-02	C	YES	DLASL
7440-41-7	Beryllium, Dissolved	5 - 5	5.0E+00	7.3E+00	N	NO	DLBSL
7440-43-9	Cadmium, Dissolved	5 - 5	5.0E+00	1.8E+00	N	YES	DLASL
7440-48-4	Cobalt, Dissolved	50 - 50	5.0E+01	1.1E+00	N	YES	DLASL
7439-97-6	Mercury, Dissolved	0.2 - 0.2	2.0E-01	1.1E+00	N	NO	DLBSL
7440-22-4	Silver, Dissolved	10 - 10	1.0E+01	1.8E+01	N	NO	DLBSL
7440-28-0	Thallium, Dissolved	25 - 25	2.5E+01	NA		NO	NTX
7440-66-6	Zinc, Dissolved	60 - 60	6.0E+01	1.1E+03	N	NO	DLBSL

Table 12
Comparison of Non-Detected Chemicals to Regional Screening Levels
Groundwater at Site 8, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening Toxicity Value [1] ug/L	Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection

[1] Oak Ridge National Laboratory (ORNL). Nov. 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. Tap Water RSL. [Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml

RSL value for 1,4-dichlorobenzene used as surrogate for 1,3-dichlorobenzene

RSL value for Methyl Isobutyl Ketone (4-methyl-2-pentanone) used as surrogate for 2-Hexanone.

RSL value for methoxychlor used as surrogate for 4-Chlorophenyl-phenylether.

RSL value for Nitrobenzene used as surrogate for 4-Nitrophenol.

RSL value for 2-Nitroaniline used as surrogate for 3-Nitroaniline.

RSL value for Acenaphthene used as surrogate for Acenaphthylene.

RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.

RSL value for anthracene used as surrogate for phenanthrene.

RSL value for Manganese (water) used as surrogate for manganese.

RSL value for Mercuric chloride used as surrogate for mercury.

RSL value for 1,3-dichloropropene used as a surrogate for cis-1,3-dichloropropene and trans-1,3-dichloropropene.

RSL value for 2-chlorophenol used as surrogate for 4-chloro-3-methylphenol and 2-nitrophenol.

Definitions: C = Carcinogenic
C* = Carcinogenic, N screening level < 100x C screening level, C screening value used as screening level
C** = N screening level < 10x C screening level, therefore N screening value/10 used as screening level
N = Noncarcinogenic
NTX = No Toxicity Information
DLBSL = Detection limit below screening level
DLASL = Detection limit above screening level
ug/L = microgram per liter

Appendix H
Risk Tables for Site 34

TABLE 1

SELECTION OF EXPOSURE PATHWAYS

Site 34, NWS Yorktown

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	OnSite/ OffSite	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Groundwater	Air	Vapor Intrusion to Indoor Air	Industrial Worker	Adult	Inhalation	Onsite	Quant	Industrial workers could inhale vapors migrating from groundwater into indoor air.
Future	Groundwater	Groundwater	Tap Water	Resident	Adult	Dermal Absorption	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
						Ingestion	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
					Child	Dermal Absorption	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
						Ingestion	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
					Child/Adult	Dermal Absorption	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply. Child/Adult evaluated for cancer risk only.
						Ingestion	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as a future potable water supply. Child/Adult evaluated for cancer risk only.
			Water in Excavation Pit	Construction Worker	Adult	Dermal Absorption	Onsite	Quant	Construction workers may contact groundwater while performing construction or excavation activities.
						Ingestion	Onsite	None	Ingestion of groundwater during construction activities expected to be minimal.
		Air	Water Vapors at Showerhead	Resident	Adult	Inhalation	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as future potable water supply.
					Child	Inhalation	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as future potable water supply.
					Child/Adult	Inhalation	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as future potable water supply.
			Volatilization from Water in Excavation Pit	Construction Worker	Adult	Inhalation	Onsite	Quant	Construction workers may inhale vapors from groundwater while performing construction or excavation activities.
			Vapor Intrusion to Indoor Air	Resident	Adult	Inhalation	Onsite	Quant	Future resident could inhale vapors migrating from groundwater in indoor air if future resident constructed on site.
					Child	Inhalation	Onsite	Quant	Future resident could inhale vapors migrating from groundwater into indoor air if future resident constructed on site.
					Child/Adult	Inhalation	Onsite	Quant	Although unlikely, groundwater will be evaluated for use as future potable water supply.

Quant: will be quantitatively evaluated.

None: Not considered to be a complete pathway, therefore, not evaluated.

Table 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Site 34
NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Vapor Intrusion to Indoor Air	71-55-6	1,1,1-Trichloroethane	2.9E+00 J	1.5E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.5E+02	ND	8.7E+02 N	N/A	N/A	NO	BSL
	79-00-5	1,1,2-Trichloroethane	1.3E+00 J	1.6E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.6E+00 J	ND	5.8E+00 C	N/A	N/A	NO	BSL
	75-34-3	1,1-Dichloroethane	4.2E+01	4.7E+01	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.7E+01	ND	7.7E+00 C	N/A	N/A	YES	ASL
	75-35-4	1,1-Dichloroethene	1.2E+01	4.0E+02	UG_L	YSA14-GW01-1107	4/6	10 - 100	4.0E+02	ND	2.2E+01 N	N/A	N/A	YES	ASL
	107-06-2	1,2-Dichloroethane	2.1E+00 J	2.5E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	2.5E+00 J	ND	5.0E+00 M	N/A	N/A	NO	BSL
	127-18-4	Tetrachloroethene	3.6E+00 J	4.2E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.2E+00 J	ND	5.0E+00 M	N/A	N/A	NO	BSL
	79-01-6	Trichloroethene	1.0E+00 J	1.4E+03	UG_L	YSA14-GW01-1107 YSA14-GW05-1107	5/6	10 - 100	1.4E+03	ND	5.0E+00 M	N/A	N/A	YES	ASL
	156-59-2	cis-1,2-Dichloroethene	5.6E+00 J	1.3E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.3E+02	ND	7.0E+01 M	N/A	N/A	YES	ASL
	156-60-5	trans-1,2-Dichloroethene	1.7E+00 J	1.8E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.8E+00 J	ND	1.0E+02 M	N/A	N/A	NO	BSL
	98-95-3	Nitrobenzene	1.2E-01 J	1.2E-01 J	UG_L	YSA14-GW05A-1107	1/6	0.15 - 0.16	1.2E-01	ND	8.9E+01 C	N/A	N/A	NO	BSL

[1] Minimum/Maximum detected concentrations.
[2] Maximum concentration is used for screening.
[3] Background values not available.
[4] Generic vapor intrusion screening values; see Table 2.1 Supplement A
[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
K = Biased High
L = Biased Low
C = Carcinogenic
N = Noncarcinogenic
µg/L = microgram per liter
M = Maximum Contaminant Level from EPA's National Primary Drinking Water Standards

Table 2.1 Supplement A
Calculation of Target Groundwater Concentrations for Vapor Intrusion Screening
Site 34, NWS, Yorktown, Yorktown, Virginia

CAS Number	Constituent	Unit Risk Factor (URF) $(ug/m^3)^{-1}$	Reference Concentration (RfC) mg/m^3	Target Indoor Air Concentration[2], carcinogen (C_{Cancer}) ug/m^3	Target Indoor Air Concentration[2], non-carcinogen ($C_{non\text{-}Cancer}$) ug/m^3	Target Indoor Air Concentration ($C_{target,ia}$) ug/m^3	System Temperature Henry's Law Constant (H'TS)[3] Dimensionless	Risk-Based Target Groundwater Concentration (C_{gw}) ug/L	MCL ug/L	Final Target Groundwater Concentration[4] (C_{gw}) ug/L
71-55-6	1,1,1-Trichloroethane	N/A	5.0E+00	N/A	5.2E+02	5.2E+02	6.0E-01	8.7E+02	2.0E+02	8.7E+02
79-00-5	1,1,2-Trichloroethane	1.6E-05	N/A	1.5E-01	N/A	1.5E-01	2.6E-02	5.8E+00	5.0E+00	5.8E+00
75-34-3	1,1-Dichloroethane	1.6E-06	N/A	1.5E+00	N/A	1.5E+00	2.0E-01	7.7E+00	N/A	7.7E+00
75-35-4	1,1-Dichloroethene	N/A	2.0E-01	N/A	2.1E+01	2.1E+01	9.4E-01	2.2E+01	7.0E+00	2.2E+01
107-06-2	1,2-Dichloroethane	2.6E-05	2.4E+00	9.4E-02	2.5E+02	9.4E-02	3.9E-02	2.4E+00	5.0E+00	5.0E+00
127-18-4	Tetrachloroethene	5.9E-06	2.7E-01	4.1E-01	2.8E+01	4.1E-01	5.9E-01	7.0E-01	5.0E+00	5.0E+00
79-01-6	Trichloroethene	2.0E-06	N/A	1.2E+00	N/A	1.2E+00	3.2E-01	3.8E+00	5.0E+00	5.0E+00
156-59-2	cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	1.4E-01	N/A	7.0E+01	7.0E+01
156-60-5	trans-1,2-Dichloroethene	N/A	6.0E-02	N/A	6.3E+00	6.3E+00	1.4E-01	4.3E+01	1.0E+02	1.0E+02
98-95-3	Nitrobenzene	4.0E-05	9.0E-03	6.1E-02	9.4E-01	6.1E-02	6.8E-04	8.9E+01	N/A	8.9E+01

Notes:
[1] The vapor intrusion screening levels [i.e., target groundwater concentration from Table 2c, Subsurface Vapor Intrusion Guidance (EPA, 2002)] were updated using the methodology presented in Appendix D of Subsurface Vapor Intrusion Guidance (EPA, 2002)
[2] EPA Regional Screening Levels (RSL) Table, December 22, 2009, Residential Air RSLs (based on 10-6 for carcinogens and HQ of 0.1 for noncarcinogens).
[3] H'TS = Henry's Law Constant (demensionless) at system (i.e., groundwater) temperature. Calculated using equation 3 from EPA, 2004.
[4] If the calculated groundwater target concentration is less than the Maximum Contaminant Level (MCL) for the compound, the target concentration is set at the MCL (EPA, 2002).
MCL = maximum contaminant level (EPA, 2009).
N/A = Not available.

Variables	Units	Value
$C_{target,ia}$ = Target indoor air conc., minimum	ug/m^3	Solved by Eq. 1
C_{gw} = Target groundwater conc.	ug/L	Solved by Eq. 2
TCR = Target Cancer Risk	unitless	1.00E-06
THQ = Target Hazard Quotient	unitless	1
URF = Unit Risk Factor	$(ug/m^3)^{-1}$	Chemical-specific
RfC = Reference Concentration	mg/m^3	Chemical-specific
H = Dimensionless Henry's Law Constant	unitless	Chemical-specific
alpha (α) = Attenuation Factor	unitless	0.001

Equation 1: $C_{target,ia}$ = Minimum(C_{cancer}, $C_{non\text{-}cancer}$)
Equation 2: Cgw = $C_{target,ia} \times 10^{-3}\ m^3/L * 1/H'TS * 1/\alpha$

Table 2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Site 34
NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Tap Water	71-55-6	1,1,1-Trichloroethane	2.9E+00 J	1.5E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.5E+02	ND	9.1E+02 N	2.0E+02	MCL	NO	BSL
	79-00-5	1,1,2-Trichloroethane	1.3E+00 J	1.6E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.6E+00	ND	2.4E-01 C	5.0E+00	MCL	YES	ASL
	75-34-3	1,1-Dichloroethane	4.2E+01	4.7E+01	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.7E+01	ND	2.4E+00 C	N/A		YES	ASL
	75-35-4	1,1-Dichloroethene	1.2E+01	4.0E+02	UG_L	YSA14-GW01-1107	4/6	10 - 100	4.0E+02	ND	3.4E+01 N	7.0E+00	MCL	YES	ASL
	107-06-2	1,2-Dichloroethane	2.1E+00 J	2.5E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	2.5E+00	ND	1.5E-01 C	5.0E+00	MCL	YES	ASL
	127-18-4	Tetrachloroethene	3.6E+00 J	4.2E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.2E+00	ND	1.1E-01 C	5.0E+00	MCL	YES	ASL
	79-01-6	Trichloroethene	1.0E+00 J	1.4E+03	UG_L	YSA14-GW01-1107 YSA14-GW05-1107	5/6	10 - 100	1.4E+03	ND	2.0E+00 C	5.0E+00	MCL	YES	ASL
	156-59-2	cis-1,2-Dichloroethene	5.6E+00 J	1.3E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.3E+02	ND	7.3E+00 N	7.0E+01	MCL	YES	ASL
	156-60-5	trans-1,2-Dichloroethene	1.7E+00 J	1.8E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.8E+00	ND	1.1E+01 N	1.0E+02	MCL	NO	BSL
	99-35-4	1,3,5-Trinitrobenzene	3.7E-02 J	3.7E-02 J	UG_L	YSA14-GW05-1107	1/7	0.097 - 0.1	3.7E-02	8.0E-02 J	1.1E+02 N	N/A		NO	BSL
	35572-78-2	2-Amino-4,6-dinitrotoluene	2.6E+00	2.6E+00	UG_L	YSA14-GW02-1107	1/6	0.29 - 0.31	2.6E+00	ND	7.3E+00 N	N/A		NO	BSL
	19406-51-0	4-Amino-2,6-dinitrotoluene	7.0E-02 J	8.1E-01	UG_L	YSA14-GW02-1107	2/6	0.15 - 0.16	8.1E-01	ND	7.3E+00 N	N/A		NO	BSL
	2691-41-0	HMX	4.8E-01	5.9E+01	UG_L	YSA14-GW02-1107	4/6	0.15 - 0.76	5.9E+01	ND	1.8E+02 N	N/A		NO	BSL
	98-95-3	Nitrobenzene	1.2E-01 J	1.2E-01 J	UG_L	YSA14-GW05A-1107	1/6	0.15 - 0.16	1.2E-01	1.3E+01	1.2E-01 C	N/A		YES	ASL
	121-82-4	RDX	6.5E-01	3.4E+01	UG_L	YSA14-GW02-1107	4/6	0.24 - 1.3	3.4E+01	ND	6.1E-01 C	N/A		YES	ASL
	7440-38-2	Arsenic-dissolved	4.9E+00 J	4.9E+00 J	UG_L	YSA14-GW02-1107	1/6	10 - 10	4.9E+00	ND	4.5E-02 C	1.0E+01	MCL	YES	ASL
	7440-39-3	Barium-dissolved	2.6E+01 J	3.5E+01 J	UG_L	YSA14-GW01-1107	5/6	200 - 200	3.5E+01	1.7E+01 J	7.3E+02 N	2.0E+03	MCL	NO	BSL
	7440-70-2	Calcium-dissolved	5.4E+04	1.3E+05	UG_L	YSA14-GW03-1107	6/6	5000 - 5000	1.3E+05	5.5E+04	N/A	N/A		NO	NUT
	7440-47-3	Chromium-dissolved	9.4E-01 L	1.8E+00 J	UG_L	YSA14-GW01A-1107	3/6	10 - 10	1.8E+00	ND	4.3E-02 C	1.0E+02	MCL	YES	ASL
	7439-89-6	Iron-dissolved	2.7E+01 J	2.9E+02	UG_L	YSA14-GW05A-1107	3/6	100 - 100	2.9E+02	3.9E+02	2.6E+03 N	3.0E+02	SMCL	NO	BSL
	7439-92-1	Lead-dissolved	2.8E+00 J	2.8E+00 J	UG_L	YSA14-GW01A-1107	1/6	10 - 10	2.8E+00	ND	N/A	1.5E+01	AL	NO	NTX
	7439-95-4	Magnesium-dissolved	2.3E+03 J	5.4E+03	UG_L	YSA14-GW01A-1107	6/6	5000 - 5000	5.4E+03	3.5E+03 J	N/A	N/A		NO	NUT
	7439-96-5	Manganese-dissolved	7.5E+00 J	4.0E+01 J	UG_L	YSA14-GW02-1107	4/6	15 - 15	4.0E+01	2.5E+01	8.8E+01 N	5.0E+01	SMCL	NO	BSL
	7440-02-0	Nickel-dissolved	1.4E+00 J	5.0E+00 J	UG_L	YSA14-GW05-1107	3/6	40 - 40	5.0E+00	1.5E+00 J	7.3E+01 N	N/A		NO	BSL
	7440-09-7	Potassium-dissolved	1.3E+03 J	5.6E+03	UG_L	YSA14-GW01A-1107	6/6	5000 - 5000	5.6E+03	3.3E+03 J	N/A	N/A		NO	NUT
	7440-23-5	Sodium-dissolved	6.0E+03	5.6E+04	UG_L	YSA14-GW01A-1107	5/6	5000 - 5000	5.6E+04	2.3E+04	N/A	N/A		NO	NUT
	7440-66-6	Zinc-dissolved	5.8E+00 L	5.8E+00 L	UG_L	YSA14-GW01A-1107	1/6	60 - 60	5.8E+00	6.5E+00 J	1.1E+03 N	5.0E+03	SMCL	NO	BSL

Table 2.2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site 34

NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection

[1] Following USEPA Region III guidance (*Guidance on the Selection of Analytical Metal Results from Monitoring Well Samples for Use in Quantitative Assessment* of Risk, USEPA, 1992), dissolved inorganic groundwater data used for tap water because an order of magnitude difference noted between dissolved and total results. (See Appendix D, *Final Groundwater Raw Analytical Results 2007-2008*.)

[2] Maximum concentration is used for screening.

[3] Background values from sample YSA14-GW04-1107

[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Adjusted (nc RSLs adjusted by dividing by 10) tap water RSLs.
RSL value for Chromium VI (chromic acid mists) used as surrogate for chromium.
RSL value for Manganese (water) used as surrogate for manganese.

[5] Rationale Codes

Selection Reason:	Above Screening Levels (ASL)
Deletion Reason:	No Toxicity Information (NTX)
	Essential Nutrient (NUT)
	Below Screening Level (BSL)

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered

J = Estimated Value
K = Biased High
L = Biased Low
ca = Carcinogenic
nc = Noncarcinogenic
UG_L = micrograms per liter
ND = not detected
N/A = not available, not applicable
AL = Action Level
MCL = Maximum Contaminant Level, Primary Drinking Water Standards
SMCL = Maximum Contaminant Level, Secondary Drinking Water Standards

Table 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Site 34
NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Water Vapors at Showerhead	71-55-6	1,1,1-Trichloroethane	2.9E+00 J	1.5E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.5E+02	ND	9.1E+02 N	2.0E+02	MCL	NO	BSL
	79-00-5	1,1,2-Trichloroethane	1.3E+00 J	1.6E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.6E+00	ND	2.4E-01 C	5.0E+00	MCL	YES	ASL
	75-34-3	1,1-Dichloroethane	4.2E+01	4.7E+01	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.7E+01	ND	2.4E+00 C	N/A		YES	ASL
	75-35-4	1,1-Dichloroethene	1.2E+01	4.0E+02	UG_L	YSA14-GW01-1107	4/6	10 - 100	4.0E+02	ND	3.4E+01 N	7.0E+00	MCL	YES	ASL
	107-06-2	1,2-Dichloroethane	2.1E+00 J	2.5E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	2.5E+00	ND	1.5E-01 C	5.0E+00	MCL	YES	ASL
	127-18-4	Tetrachloroethene	3.6E+00 J	4.2E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.2E+00	ND	1.1E-01 C	5.0E+00	MCL	YES	ASL
	79-01-6	Trichloroethene	1.0E+00 J	1.4E+03	UG_L	YSA14-GW01-1107 YSA14-GW05-1107	5/6	10 - 100	1.4E+03	ND	2.0E+00 C	5.0E+00	MCL	YES	ASL
	156-59-2	cis-1,2-Dichloroethene	5.6E+00 J	1.3E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.3E+02	ND	7.3E+00 N	7.0E+01	MCL	YES	ASL
	156-60-5	trans-1,2-Dichloroethene	1.7E+00 J	1.8E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.8E+00	ND	1.1E+01 N	1.0E+02	MCL	NO	BSL
	98-95-3	Nitrobenzene	1.2E-01 J	1.2E-01 J	UG_L	YSA14-GW05A-1107	1/6	0.15 - 0.16	1.2E-01	ND	1.2E-01 C	N/A		YES	ASL

[1] Minimum/Maximum detected concentrations.
[2] Maximum concentration is used for screening.
[3] Background values from sample YSA14-GW04-1107
[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online].
Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Adjusted (nc RSLs adjusted by dividing by 10) tap water RSLs.
RSL value for Manganese (water) used as surrogate for manganese.
[5] Rationale Codes

Selection Reason:	Above Screening Levels (ASL)
Deletion Reason:	No Toxicity Information (NTX)
	Essential Nutrient (NUT)
	Below Screening Level (BSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
K = Biased High
L = Biased Low
C = Carcinogenic
N = Noncarcinogenic
UG_L = micrograms per liter
ND = not detected
N/A = not available, not applicable
MCL = Maximum Contaminant Level, Primary Drinking Water Standards

Table 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Site 34
NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Water in Excavation Pit	71-55-6	1,1,1-Trichloroethane	2.9E+00 J	1.5E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.5E+02	ND	9.1E+02 N	2.0E+02	MCL	NO	BSL
	79-00-5	1,1,2-Trichloroethane	1.3E+00 J	1.6E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.6E+00	ND	2.4E-01 C	5.0E+00	MCL	YES	ASL
	75-34-3	1,1-Dichloroethane	4.2E+01	4.7E+01	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.7E+01	ND	2.4E+00 C	N/A		YES	ASL
	75-35-4	1,1-Dichloroethene	1.2E+01	4.0E+02	UG_L	YSA14-GW01-1107	4/6	10 - 100	4.0E+02	ND	3.4E+01 N	7.0E+00	MCL	YES	ASL
	107-06-2	1,2-Dichloroethane	2.1E+00 J	2.5E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	2.5E+00	ND	1.5E-01 C	5.0E+00	MCL	YES	ASL
	127-18-4	Tetrachloroethene	3.6E+00 J	4.2E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.2E+00	ND	1.1E-01 C	5.0E+00	MCL	YES	ASL
	79-01-6	Trichloroethene	1.0E+00 J	1.4E+03	UG_L	YSA14-GW01-1107 YSA14-GW05-1107	5/6	10 - 100	1.4E+03	ND	2.0E+00 C	5.0E+00	MCL	YES	ASL
	156-59-2	cis-1,2-Dichloroethene	5.6E+00 J	1.3E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.3E+02	ND	7.3E+00 N	7.0E+01	MCL	YES	ASL
	156-60-5	trans-1,2-Dichloroethene	1.7E+00 J	1.8E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.8E+00	ND	1.1E+01 N	1.0E+02	MCL	NO	BSL
	99-35-4	1,3,5-Trinitrobenzene	3.7E-02 J	3.7E-02 J	UG_L	YSA14-GW05-1107	1/7	0.097 - 0.1	3.7E-02	8.0E-02 J	1.1E+02 N	N/A		NO	BSL
	35572-78-2	2-Amino-4,6-dinitrotoluene	2.6E+00	2.6E+00	UG_L	YSA14-GW02-1107	1/6	0.29 - 0.31	2.6E+00	ND	7.3E+00 N	N/A		NO	BSL
	19406-51-0	4-Amino-2,6-dinitrotoluene	7.0E-02 J	8.1E-01	UG_L	YSA14-GW02-1107	2/6	0.15 - 0.16	8.1E-01	ND	7.3E+00 N	N/A		NO	BSL
	2691-41-0	HMX	4.8E-01	5.9E+01	UG_L	YSA14-GW02-1107	4/6	0.15 - 0.76	5.9E+01	ND	1.8E+02 N	N/A		NO	BSL
	98-95-3	Nitrobenzene	1.2E-01 J	1.2E-01 J	UG_L	YSA14-GW05A-1107	1/6	0.15 - 0.16	1.2E-01	1.3E+01	1.2E-01 C	N/A		YES	ASL
	121-82-4	RDX	6.5E-01	3.4E+01	UG_L	YSA14-GW02-1107	4/6	0.24 - 1.3	3.4E+01	ND	6.1E-01 C	N/A		YES	ASL
	7429-90-5	Aluminum	1.4E+02 K	1.0E+04 K	UG_L	YSA14-GW01-1107	6/6	200 - 200	1.0E+04	2.7E+02	3.7E+03 N	50-200	SMCL	YES	ASL
	7440-38-2	Arsenic	3.7E+00 J	3.3E+01	UG_L	YSA14-GW01-1107	4/6	10 - 10	3.3E+01	ND	4.5E-02 C	1.00E+01	MCL	YES	ASL
	7440-39-3	Barium	2.9E+01 J	6.6E+01 J	UG_L	YSA14-GW01-1107	5/6	200 - 200	6.6E+01	2.1E+01 J	7.3E+02 N	2.00E+03	MCL	NO	BSL
	7440-41-7	Beryllium	2.1E-01 J	4.7E-01 J	UG_L	YSA14-GW01-1107	2/6	5 - 5	4.7E-01	ND	7.3E+00 N	4.00E+00	MCL	NO	BSL
	7440-43-9	Cadmium	3.4E-01 J	3.6E+00 J	UG_L	YSA14-GW02-1107	3/6	5 - 5	3.6E+00	ND	1.8E+00 N	5.00E+00	MCL	YES	ASL
	7440-70-2	Calcium	5.3E+04	1.7E+05	UG_L	YSA14-GW01-1107	6/6	5000 - 5000	1.7E+05	5.7E+04	N/A	N/A		NO	NUT
	7440-47-3	Chromium	1.7E+00 J	1.5E+02	UG_L	YSA14-GW01-1107	6/6	10 - 10	1.5E+02	1.4E+01	4.3E-02 C	1.00E+02	MCL	YES	ASL
	7440-48-4	Cobalt	1.5E+00 J	5.6E+00 J	UG_L	YSA14-GW01-1107	3/6	50 - 50	5.6E+00	ND	1.1E+00 N	3.00E+02	SMCL	YES	ASL
	7439-89-6	Iron	2.5E+02 K	2.3E+04 K	UG_L	YSA14-GW01-1107	6/6	100 - 100	2.3E+04	1.0E+03 L	2.6E+03 N	3.00E+02	SMCL	YES	ASL
	7439-92-1	Lead	8.7E+00 J	8.7E+00 J	UG_L	YSA14-GW01-1107	1/6	10 - 10	8.7E+00	ND	N/A	1.50E+01	AL	NO	NTX
	7439-95-4	Magnesium	2.4E+03 J	6.5E+03	UG_L	YSA14-GW01-1107	6/6	5000 - 5000	6.5E+03	3.6E+03 J	N/A	N/A		NO	NUT
	7439-96-5	Manganese	2.4E+00 J	1.0E+02	UG_L	YSA14-GW01-1107	6/6	15 - 15	1.0E+02	3.2E+01	8.8E+01 N	5.00E+01	SMCL	YES	ASL
	7440-02-0	Nickel	3.1E+00 J	7.3E+01	UG_L	YSA14-GW01A-1107	5/6	40 - 40	7.3E+01	6.9E+00 J	7.3E+01 N	N/A		YES	ASL
	7440-09-7	Potassium	1.6E+03 J	5.5E+03	UG_L	YSA14-GW01A-1107	6/6	5000 - 5000	5.5E+03	3.4E+03 J	N/A	N/A		NO	NUT
	7440-23-5	Sodium	6.1E+03	5.5E+04	UG_L	YSA14-GW01A-1107	6/6	5000 - 5000	5.5E+04	2.3E+04	N/A	N/A		NO	NUT
	7440-62-2	Vanadium	1.5E+00 J	4.9E+01 J	UG_L	YSA14-GW01-1107	5/6	50 - 50	4.9E+01	ND	1.8E+01 N	N/A		YES	ASL
	7440-66-6	Zinc	4.8E+00 J	4.4E+01 J	UG_L	YSA14-GW01-1107	4/6	60 - 60	4.4E+01	1.4E+01 J	1.1E+03 N	5.00E+03	SMCL	NO	BSL

Table 2.4

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Site 34

NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection

[1] Analytical data from unfiltered samples used for construction worker exposure to groundwater because the construction worker is assumed to come in direct contact with groundwater at the site.

[2] Maximum concentration is used for screening.

[3] Background values from sample YSA14-GW04-1107

[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Adjusted (n RSLs adjusted by dividing by 10) tap water RSLs.
RSL value for Manganese (water) used as surrogate for manganese.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered

J = Estimated Value
K = Biased High
L = Biased Low
C = Carcinogenic
N = Noncarcinogenic
ND = not detected
N/A = not available, not applicable
AL = Action Level
MCL = Maximum Contaminant Level, Primary Drinking Water Standards
SMCL = Maximum Contaminant Level, Secondary Drinking Water Standards

Table 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Site 34
NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Water Vapors in Excavation Pit	71-55-6	1,1,1-Trichloroethane	2.9E+00 J	1.5E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.5E+02	ND	9.1E+02 N	2.0E+02	MCL	NO	BSL
	79-00-5	1,1,2-Trichloroethane	1.3E+00 J	1.6E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.6E+00	ND	2.4E-01 C	5.0E+00	MCL	YES	ASL
	75-34-3	1,1-Dichloroethane	4.2E+01	4.7E+01	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.7E+01	ND	2.4E+00 C	N/A		YES	ASL
	75-35-4	1,1-Dichloroethene	1.2E+01	4.0E+02	UG_L	YSA14-GW01-1107	4/6	10 - 100	4.0E+02	ND	3.4E+01 N	7.0E+00	MCL	YES	ASL
	107-06-2	1,2-Dichloroethane	2.1E+00 J	2.5E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	2.5E+00	ND	1.5E-01 C	5.0E+00	MCL	YES	ASL
	127-18-4	Tetrachloroethene	3.6E+00 J	4.2E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	4.2E+00	ND	1.1E-01 C	5.0E+00	MCL	YES	ASL
	79-01-6	Trichloroethene	1.0E+00 J	1.4E+03	UG_L	YSA14-GW01-1107 YSA14-GW05-1107	5/6	10 - 100	1.4E+03	ND	2.0E+00 C	5.0E+00	MCL	YES	ASL
	156-59-2	cis-1,2-Dichloroethene	5.6E+00 J	1.3E+02	UG_L	YSA14-GW05-1107	3/6	10 - 10	1.3E+02	ND	7.3E+00 N	7.0E+01	MCL	YES	ASL
	156-60-5	trans-1,2-Dichloroethene	1.7E+00 J	1.8E+00 J	UG_L	YSA14-GW05-1107	2/6	10 - 10	1.8E+00	ND	1.1E+01 N	1.0E+02	MCL	NO	BSL
	98-95-3	Nitrobenzene	1.2E-01 J	1.2E-01 J	UG_L	YSA14-GW05A-1107	1/6	0.15 - 0.16	1.2E-01	1.3E+01	1.2E-01 C	N/A		YES	ASL

[1] Minimum/Maximum detected concentrations.
[2] Maximum concentration is used for screening.
[3] Background values from sample YSA14-GW04-1107
[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online].
Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Adjusted (n RSLs adjusted by dividing by 10) tap water RSLs.
RSL value for Manganese (water) used as surrogate for manganese.
[5] Rationale Codes

Selection Reason:	Above Screening Levels (ASL)
Deletion Reason:	No Toxicity Information (NTX)
	Essential Nutrient (NUT)
	Below Screening Level (BSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
K = Biased High
L = Biased Low
C = Carcinogenic
N = Noncarcinogenic
ND = not detected
N/A = not available, not applicable
MCL = Maximum Contaminant Level, Primary Drinking Water Standards

Table 3.1.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Shallow Aquifer - Indoor Air (Industrial Worker)	1,1-Dichloroethane	NA	NA	NA	NA	4.8E-02	ug/m^3	Max	(1)
	1,1-Dichloroethene	NA	NA	NA	NA	1.4E+00	ug/m^3	Max	(1)
	Trichloroethene	NA	NA	NA	NA	1.7E+00	ug/m^3	Max	(1)
	cis-1,2-Dichloroethene	NA	NA	NA	NA	1.1E-01	ug/m^3	Max	(1)

(1) Indoor air concentrations calculated using Johnson and Ettinger model. See output from Johnson and Ettinger model in Table 11.2.

Max = Maximum concentration
UG/M^3 = micrograms per cubic meter
NA = Not applicable

Table 3.2.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Tap Water											
	1,1,2-Trichloroethane	UG_L	1.5E+00	1.8E+00	NP	1.6E+00	J	1.6E+00	UG_L	Max	4, 5
	1,1-Dichloroethane	UG_L	4.3E+01	4.5E+01	NP	4.7E+01		4.5E+01	UG_L	95% KM-t	4
	1,1-Dichloroethene	UG_L	1.3E+02	2.9E+02	NP	4.0E+02		2.9E+02	UG_L	95% KM-t	1, 2, 3
	1,2-Dichloroethane	UG_L	2.3E+00	2.7E+00	NP	2.5E+00	J	2.5E+00	UG_L	Max	4, 5
	Tetrachloroethene	UG_L	3.9E+00	4.5E+00	NP	4.2E+00	J	4.2E+00	UG_L	Max	4, 5
	Trichloroethene	UG_L	4.9E+02	1.8E+03	NP	1.4E+03		1.4E+03	UG_L	Max	1, 3, 4
	cis-1,2-Dichloroethene	UG_L	4.4E+01	9.8E+01	NP	1.3E+02		9.8E+01	UG_L	95% KM-t	1, 2
	Nitrobenzene	UG_L	8.3E-02	9.9E-02	NP	1.2E-01	J	9.9E-02	UG_L	95% Mod-t	4
	RDX	UG_L	7.1E+00	1.8E+01	NP	3.4E+01		1.8E+01	UG_L	95% KM-BCA	1, 3
	Arsenic-dissolved	UG_L	5.0E+00	5.0E+00	NP	4.9E+00	J	4.9E+00	UG_L	Max	4, 5
	Chromium-dissolved	UG_L	1.1E+00	1.5E+00	NP	1.8E+00	J	1.5E+00	UG_L	95% KM-t	4

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).

Statistics: 95% Modified-t UCL (95% Mod-t); 95% Kaplan-Meier (BCA) UCL (95% KM-BCA); 95% Kaplan-Meier (KM) (t) UCL (95% KM-t); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.3.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Water Vapors at Showerhead	1,1,2-Trichloroethane	UG_L	1.5E+00	1.8E+00	NP	1.6E+00	J	1.6E+00	UG_L	Max	4, 5
	1,1-Dichloroethane	UG_L	4.3E+01	4.5E+01	NP	4.7E+01		4.5E+01	UG_L	95% KM-t	4
	1,1-Dichloroethene	UG_L	1.3E+02	2.9E+02	NP	4.0E+02		2.9E+02	UG_L	95% KM-t	1, 2, 3
	1,2-Dichloroethane	UG_L	2.3E+00	2.7E+00	NP	2.5E+00	J	2.5E+00	UG_L	Max	4, 5
	Tetrachloroethene	UG_L	3.9E+00	4.5E+00	NP	4.2E+00	J	4.2E+00	UG_L	Max	4, 5
	Trichloroethene	UG_L	4.9E+02	1.8E+03	NP	1.4E+03		1.4E+03	UG_L	Max	1, 3, 4
	cis-1,2-Dichloroethene	UG_L	4.4E+01	9.8E+01	NP	1.3E+02		9.8E+01	UG_L	95% KM-t	1, 2
	Nitrobenzene	UG_L	8.3E-02	9.9E-02	NP	1.2E-01	J	9.9E-02	UG_L	95% Mod-t	4

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).

Statistics: 95% Modified-t UCL (95% Mod-t); 95% Kaplan-Meier (BCA) UCL (95% KM-BCA); 95% Kaplan-Meier (KM) (t) UCL (95% KM-t); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.4.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe:Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Shallow Aquifer - Indoor Air (Residents)	1,1-Dichloroethane	NA	NA	NA	NA	1.1E-01	ug/m^3	Max	(1)
	1,1-Dichloroethene	NA	NA	NA	NA	3.4E+00	ug/m^3	Max	(1)
	Trichloroethene	NA	NA	NA	NA	4.1E+00	ug/m^3	Max	(1)
	cis-1,2-Dichloroethene	NA	NA	NA	NA	2.6E-01	ug/m^3	Max	(1)

(1) Indoor air concentrations calculated using Johnson and Ettinger model. See output from Johnson and Ettinger model in Table 11.3.

Max = Maximum concentration
UG/M^3 = micrograms per cubic meter
NA = Not applicable

Table 3.5.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Water in Excavation Pit	1,1,2-Trichloroethane	UG_L	1.5E+00	1.8E+00	NP	1.6E+00	J	1.6E+00	UG_L	Max	4, 5
	1,1-Dichloroethane	UG_L	4.3E+01	4.5E+01	NP	4.7E+01		4.5E+01	UG_L	95% KM-t	4
	1,1-Dichloroethene	UG_L	1.3E+02	2.9E+02	NP	4.0E+02		2.9E+02	UG_L	95% KM-t	1, 2, 3
	1,2-Dichloroethane	UG_L	2.3E+00	2.7E+00	NP	2.5E+00	J	2.5E+00	UG_L	Max	4, 5
	Tetrachloroethene	UG_L	3.9E+00	4.5E+00	NP	4.2E+00	J	4.2E+00	UG_L	Max	4, 5
	Trichloroethene	UG_L	4.9E+02	1.8E+03	NP	1.4E+03		1.4E+03	UG_L	Max	1, 3, 4
	cis-1,2-Dichloroethene	UG_L	4.4E+01	9.8E+01	NP	1.3E+02		9.8E+01	UG_L	95% KM-t	1, 2
	Nitrobenzene	UG_L	8.3E-02	9.9E-02	NP	1.2E-01	J	9.9E-02	UG_L	95% Mod-t	4
	RDX	UG_L	7.1E+00	1.8E+01	NP	3.4E+01		1.8E+01	UG_L	95% KM-BCA	1, 3
	Aluminum	UG_L	2.3E+03	1.1E+04	G	1.0E+04	K	1.0E+04	UG_L	Max	1, 3, 5
	Arsenic	UG_L	1.1E+01	2.1E+01	NP	3.3E+01		2.1E+01	UG_L	95% KM-t	1, 2, 3
	Cadmium	UG_L	1.5E+00	3.6E+00	NP	3.6E+00	J	3.6E+00	UG_L	Max	1, 2, 5
	Chromium	UG_L	7.8E+01	1.4E+02	N	1.5E+02		1.4E+02	UG_L	95% Stud-t	1, 2, 3
	Cobalt	UG_L	3.0E+00	5.6E+00	NP	5.6E+00	J	5.6E+00	UG_L	Max	1, 2, 5
	Iron	UG_L	5.5E+03	2.3E+04	G	2.3E+04	K	2.3E+04	UG_L	App. Gamma	1, 3
	Manganese	UG_L	4.2E+01	7.0E+01	N	1.0E+02		7.0E+01	UG_L	95% Stud-t	1, 2, 3
	Nickel	UG_L	3.8E+01	6.5E+01	NP	7.3E+01		6.5E+01	UG_L	95% KM-t	1, 2, 3
	Vanadium	UG_L	1.3E+01	5.3E+01	NP	4.9E+01	J	4.9E+01	UG_L	Max	1, 3, 5

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).

Statistics: 95% Chebyshev (mean, std) UCL (95% Cheb-m); 95% Modified-t UCL (95% Mod-t); 95% Kaplan-Meier (percentile Bootstrap) (95% KM-b); 95% Kaplan-Meier (t) UCL (95% KM-t); 95% Student's-T test UCL (95% Stud-t); 95% Kaplan-Meier (BCA) UCL (95% KM-BCA); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.

N = Normal
T = Log-Transformed
NP = Non-Parametric

Table 3.5.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale

(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.6.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Volatilization from Water in Excavation Pit	1,1,2-Trichloroethane	UG_L	1.5E+00	1.8E+00	NP	1.6E+00	J	1.6E+00	UG_L	Max	4, 5
	1,1-Dichloroethane	UG_L	4.3E+01	4.5E+01	NP	4.7E+01		4.5E+01	UG_L	95% KM-t	4
	1,1-Dichloroethene	UG_L	1.3E+02	2.9E+02	NP	4.0E+02		2.9E+02	UG_L	95% KM-t	1, 2, 3
	1,2-Dichloroethane	UG_L	2.3E+00	2.7E+00	NP	2.5E+00	J	2.5E+00	UG_L	Max	4, 5
	Tetrachloroethene	UG_L	3.9E+00	4.5E+00	NP	4.2E+00	J	4.2E+00	UG_L	Max	4, 5
	Trichloroethene	UG_L	4.9E+02	1.8E+03	NP	1.4E+03		1.4E+03	UG_L	Max	1, 3, 4
	cis-1,2-Dichloroethene	UG_L	4.4E+01	9.8E+01	NP	1.3E+02		9.8E+01	UG_L	95% KM-t	1, 2
	Nitrobenzene	UG_L	8.3E-02	9.9E-02	NP	1.2E-01	J	9.9E-02	UG_L	95% Mod-t	4

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).

Statistics: 95% Chebyshev (mean, std) UCL (95% Cheb-m); 95% Modified-t UCL (95% Mod-t); 95% Kaplan-Meier (percentile Bootstrap) (95% KM-b); 95% Kaplan-Meier (t) UCL (95% KM-t); 95% Student's-T test UCL (95% Stud-t); 95% Kaplan-Meier (BCA) UCL (95% KM-BCA); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.1.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Shallow Aquifer - Indoor Air (Industrial Worker)	1,1-Dichloroethane	NA	NA	NA	NA	4.8E-02	ug/m^3	Max	(1)
	1,1-Dichloroethene	NA	NA	NA	NA	1.4E+00	ug/m^3	Max	(1)
	Trichloroethene	NA	NA	NA	NA	1.7E+00	ug/m^3	Max	(1)
	cis-1,2-Dichloroethene	NA	NA	NA	NA	1.1E-01	ug/m^3	Max	(1)

(1) Indoor air concentrations calculated using Johnson and Ettinger model. See output from Johnson and Ettinger model in Table 11.2.

Max = Maximum concentration
UG/M^3 = micrograms per cubic meter
NA = Not applicable

Table 3.2.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Tap Water											
	1,1,2-Trichloroethane	UG_L	1.5E+00	1.8E+00	NP	1.6E+00	J	1.5E+00	UG_L	Mean-KM	4
	1,1-Dichloroethane	UG_L	4.3E+01	4.5E+01	NP	4.7E+01		4.3E+01	UG_L	Mean-KM	4
	1,1-Dichloroethene	UG_L	1.3E+02	2.9E+02	NP	4.0E+02		1.3E+02	UG_L	Mean-KM	1, 2, 3
	1,2-Dichloroethane	UG_L	2.3E+00	2.7E+00	NP	2.5E+00	J	2.3E+00	UG_L	Mean-KM	4
	Tetrachloroethene	UG_L	3.9E+00	4.5E+00	NP	4.2E+00	J	3.9E+00	UG_L	Mean-KM	4
	Trichloroethene	UG_L	4.9E+02	1.8E+03	NP	1.4E+03		4.9E+02	UG_L	Mean-KM	1, 3, 4
	cis-1,2-Dichloroethene	UG_L	4.4E+01	9.8E+01	NP	1.3E+02		4.4E+01	UG_L	Mean-KM	1, 2
	Nitrobenzene	UG_L	8.3E-02	9.9E-02	NP	1.2E-01	J	8.3E-02	UG_L	Mean-KM	4
	RDX	UG_L	7.1E+00	1.8E+01	NP	3.4E+01		7.1E+00	UG_L	Mean-KM	1, 3
	Arsenic-dissolved	UG_L	5.0E+00	5.0E+00	NP	4.9E+00	J	4.9E+00	UG_L	Max	4, 5
	Chromium-dissolved	UG_L	1.1E+00	1.5E+00	NP	1.8E+00	J	1.1E+00	UG_L	Mean-KM	4

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).
Statistics: Normal Mean (Mean-N); Kaplan-Meier Mean (Mean-KM); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than mean.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.3.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Tap Water											
	1,1,2-Trichloroethane	UG_L	1.5E+00	1.8E+00	NP	1.6E+00	J	1.5E+00	UG_L	Mean-KM	4
	1,1-Dichloroethane	UG_L	4.3E+01	4.5E+01	NP	4.7E+01		4.3E+01	UG_L	Mean-KM	4
	1,1-Dichloroethene	UG_L	1.3E+02	2.9E+02	NP	4.0E+02		1.3E+02	UG_L	Mean-KM	1, 2, 3
	1,2-Dichloroethane	UG_L	2.3E+00	2.7E+00	NP	2.5E+00	J	2.3E+00	UG_L	Mean-KM	4
	Tetrachloroethene	UG_L	3.9E+00	4.5E+00	NP	4.2E+00	J	3.9E+00	UG_L	Mean-KM	4
	Trichloroethene	UG_L	4.9E+02	1.8E+03	NP	1.4E+03		4.9E+02	UG_L	Mean-KM	1, 3, 4
	cis-1,2-Dichloroethene	UG_L	4.4E+01	9.8E+01	NP	1.3E+02		4.4E+01	UG_L	Mean-KM	1, 2
	Nitrobenzene	UG_L	8.3E-02	9.9E-02	NP	1.2E-01	J	8.3E-02	UG_L	Mean-KM	4

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).

Statistics: Normal Mean (Mean-N); Kaplan-Meier Mean (Mean-KM); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than mean.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.4.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe:Future
Medium: Groundwater
Exposure Medium: Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Shallow Aquifer - Indoor Air (Residents)	1,1-Dichloroethane	NA	NA	NA	NA	1.1E-01	ug/m^3	Max	(1)
	1,1-Dichloroethene	NA	NA	NA	NA	3.4E+00	ug/m^3	Max	(1)
	Trichloroethene	NA	NA	NA	NA	4.1E+00	ug/m^3	Max	(1)
	cis-1,2-Dichloroethene	NA	NA	NA	NA	2.6E-01	ug/m^3	Max	(1)

(1) Indoor air concentrations calculated using Johnson and Ettinger model. See output from Johnson and Ettinger model in Table 11.3.

Max = Maximum concentration
UG/M^3 = micrograms per cubic meter
NA = Not applicable

Table 3.5.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Water in Excavation Pit	1,1,2-Trichloroethane	UG_L	1.5E+00	1.8E+00	NP	1.6E+00	J	1.5E+00	UG_L	Mean-KM	4
	1,1-Dichloroethane	UG_L	4.3E+01	4.5E+01	NP	4.7E+01		4.3E+01	UG_L	Mean-KM	4
	1,1-Dichloroethene	UG_L	1.3E+02	2.9E+02	NP	4.0E+02		1.3E+02	UG_L	Mean-KM	1, 2, 3
	1,2-Dichloroethane	UG_L	2.3E+00	2.7E+00	NP	2.5E+00	J	2.3E+00	UG_L	Mean-KM	4, 5
	Tetrachloroethene	UG_L	3.9E+00	4.5E+00	NP	4.2E+00	J	3.9E+00	UG_L	Mean-KM	4
	Trichloroethene	UG_L	4.9E+02	1.8E+03	NP	1.4E+03		4.9E+02	UG_L	Mean-KM	1, 3, 4
	cis-1,2-Dichloroethene	UG_L	4.4E+01	9.8E+01	NP	1.3E+02		4.4E+01	UG_L	Mean-KM	1, 2
	Nitrobenzene	UG_L	8.3E-02	9.9E-02	NP	1.2E-01	J	8.3E-02	UG_L	Mean-KM	4
	RDX	UG_L	7.1E+00	1.8E+01	NP	3.4E+01		7.1E+00	UG_L	Mean-KM	1, 3
	Aluminum	UG_L	2.3E+03	1.1E+04	G	1.0E+04	K	2.3E+03	UG_L	Mean-N	1, 3
	Arsenic	UG_L	1.1E+01	2.1E+01	NP	3.3E+01		1.1E+01	UG_L	Mean-KM	1, 2, 3
	Cadmium	UG_L	1.5E+00	3.6E+00	NP	3.6E+00	J	1.5E+00	UG_L	Mean-KM	1, 2
	Chromium	UG_L	7.8E+01	1.4E+02	N	1.5E+02		7.8E+01	UG_L	Mean-N	1, 2, 3
	Cobalt	UG_L	3.0E+00	5.6E+00	NP	5.6E+00	J	3.0E+00	UG_L	Mean-KM	1, 2
	Iron	UG_L	5.5E+03	2.3E+04	G	2.3E+04	K	5.5E+03	UG_L	Mean-N	1, 3
	Manganese	UG_L	4.2E+01	7.0E+01	N	1.0E+02		4.2E+01	UG_L	Mean-N	1, 2, 3
	Nickel	UG_L	3.8E+01	6.5E+01	NP	7.3E+01		3.8E+01	UG_L	Mean-KM	1, 2, 3
	Vanadium	UG_L	1.3E+01	5.3E+01	NP	4.9E+01	J	1.3E+01	UG_L	Mean-KM	1, 3

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).
Statistics: Normal Mean (Mean-N); Kaplan-Meier Mean (Mean-KM); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than mean.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

Table 3.6.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 34, NWS Yorktown, Yorktown, VA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Volatilization from Water in Excavation Pit	1,1,2-Trichloroethane	UG_L	1.5E+00	1.8E+00	NP	1.6E+00	J	1.5E+00	UG_L	Mean-KM	4
	1,1-Dichloroethane	UG_L	4.3E+01	4.5E+01	NP	4.7E+01		4.3E+01	UG_L	Mean-KM	4
	1,1-Dichloroethene	UG_L	1.3E+02	2.9E+02	NP	4.0E+02		1.3E+02	UG_L	Mean-KM	1, 2, 3
	1,2-Dichloroethane	UG_L	2.3E+00	2.7E+00	NP	2.5E+00	J	2.3E+00	UG_L	Mean-KM	4, 5
	Tetrachloroethene	UG_L	3.9E+00	4.5E+00	NP	4.2E+00	J	3.9E+00	UG_L	Mean-KM	4
	Trichloroethene	UG_L	4.9E+02	1.8E+03	NP	1.4E+03		4.9E+02	UG_L	Mean-KM	1, 3, 4
	cis-1,2-Dichloroethene	UG_L	4.4E+01	9.8E+01	NP	1.3E+02		4.4E+01	UG_L	Mean-KM	1, 2
	Nitrobenzene	UG_L	8.3E-02	9.9E-02	NP	1.2E-01	J	8.3E-02	UG_L	Mean-KM	4

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).

Statistics: Normal Mean (Mean-N); Kaplan-Meier Mean (Mean-KM); Maximum Detected Value (Max)

UCL Rationale:
(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than mean.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma
ug/l = micrograms per liter
J = Estimated Value

TABLE 4.1.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Industrial Worker	Adult	Indoor Air	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.1.RME	mg/m^3	See Table 3.1.RME	CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	8	hr/day	(1)	
				EF	Exposure Frequency	60	days/year	(2)	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration	25	years	EPA, 1991	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	EPA, 1989	

Notes:

(1) Assumed that worker would be present 8 hrs per day.

(2) Site-specific information indicates workers are present at bunkers up to 5 days per month.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-W	Ingestion Rate of Water	2	liters/day	EPA, 1997	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	24	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Child	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) =
				IR-W	Ingestion Rate of Water	1	liters/day	EPA, 1997	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	6	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
		Child/Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) =
				IR-W-A	Ingestion Rate of Water, Adult	2	liters/day	EPA, 1997	CW x IR-W-Adj x EF x CF2 x 1/AT
				IR-W-C	Ingestion Rate of Water, Child	1	liters/day	EPA, 1997	
				IR-W-Adj	Ingestion Rate of Water, Age-adjusted	1.09	liter-year/kg-day	calculated	IR-W-Adj (liter-year/kd-day) =
				EF	Exposure Frequency	350	days/year	EPA, 1991	(ED-C x IR-W-C / BW-C) +
				ED-A	Exposure Duration, Adult	24	years	EPA, 1991	(ED-A x IR-W-A / BW-A)
				ED-C	Exposure Duration, Child	6	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW-A	Body Weight , Adult	70	kg	EPA, 1991	
				BW-C	Body Weight, Child	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	0.58	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	18,000	cm^2	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 xτ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	350	days/year	EPA, 2004	
				ED	Exposure Duration	24	years	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
		Child	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	1.0	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	6,600	cm^2	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 xτ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	350	days/year	EPA, 2004	
				ED	Exposure Duration	6	years	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	15	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Child/Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	CDI (mg/kg-day) = DA-Adj x EF x 1/AT
				DAevent-A	Dermally Absorbed Dose per Event, Adult	calculated	mg/cm^2-event	calculated	
				DAevent-C	Dermally Absorbed Dose per Event, Child	calculated	mg/cm^2-event	calculated	DA-Adj = (Daevent-A x SA-A x ED-A x 1/BW-A)
				DA-Adj	Dermally Absorbed Dose, Age-adjusted	calculated	mg-year/event-kg	calculated	+ (Daevent-C x SA-C x ED-C x 1/BW-C)
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}-A	Event Time, Adult	0.58	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				t_{event}-C	Event Time, Child	1.0	hr/event	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 xτ x t_{event})/π))
				SA-A	Skin Surface Area, Adult	18,000	cm^2	EPA, 2004	x CF2 x CF3
				SA-C	Skin Surface Area, Child	6,600	cm^2	EPA, 2004	
				EV	Event Frequency	1	events/day	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				EF	Exposure Frequency	350	days/year	EPA, 2004	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				ED-A	Exposure Duration, Adult	24	years	EPA, 2004	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				ED-C	Exposure Duration, Child	6	years	EPA, 2004	
				BW-A	Body Weight, Adult	70	kg	EPA, 1991	
				BW-C	Body Weight, Child	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
	Construction Worker	Adult	Water in Excavation Pit	CW	Chemical Concentration in Water	See Table 3.5.RME	µg/l	See Table 3.5.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	8	hr/day	(1)	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	EPA, 2004, (3)	2 x FA x Kp x CW x (sqrt((6 xτ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	125	days/year	(2)	
				ED	Exposure Duration	1	years	EPA, 1991	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

(1) Professional judgment based on construction activities that would occur 8 hrs per day for the RME.

TABLE 4.2.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name

(2) Assumed contact with groundwater during construction project would be 125 days/year.

(3) Skin surface area in contact with groundwater assumed to be hands, forearms, lower legs, and feet.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.

EPA, 2004 . Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment (Final). EPA/540/R/99/005. July 2004.

TABLE 4.3.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
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	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.RME	µg/l	See Table 3.3.RME	Chronic Daily Intake (CDI) (mg/kg-day) =
				CAa	Chemical Concentration in Air	Calculated	mg/m^3	Calculated	CAa x ETa x EDa x EF x CF1 x 1/AT
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				EDa	Exposure Duration	24	years	EPA, 1991	Use Foster & Chrostowski Shower model to
				ETa	Exposure Time	0.58	hr/day	EPA, 2004	calculate Ca-a and Ca-c
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.4.RME	mg/m^3	See Table 3.4.RME	CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	24	years	EPA, 1991	CA calculated using Johnson and Ettinger model
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Child	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.RME	µg/l	See Table 3.3.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CAc	Chemical Concentration in Air	Calculated	mg/m^3	Calculated	CA_c x ET_c x ED_c x EF x CF1 x 1/AT
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				EDc	Exposure Duration	6	years	EPA, 1991	Use Foster & Chrostowski Shower model to
				ETc	Exposure Time	1	hr/day	EPA, 2004	calculate Ca-a and Ca-c
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.2.RME	µg/l	See Table 3.2.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.4.RME	mg/m^3	See Table 3.4.RME	CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	6	years	EPA, 1991	CA calculated using Johnson and Ettinger model
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	

TABLE 4.3.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
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/Adult	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.2	µg/l	See Table 3.2	Chronic Daily Intake (CDI) (mg/m3) =
				Ca-a	Air Concentration for shower, Adult	Calculated	mg/m^3	Calculated	(CAc x ETc x EDc + CAa x ETa x EDa) x EF x CF1 x 1/AT
				Ca-c	Air Concentration for shower, child	Calculated	mg/m^3	Calculated	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				EDa	Exposure Duration, Adult	24	years	EPA, 1991	Use Foster & Chrostowski Shower model to
				EDc	Exposure Duration, Child	6	years	EPA, 1991	calculate Ca-a and Ca-c
				ETa	Exposure Time	0.58	hr/day	EPA, 2004	
				ETc	Exposure Time	1	hr/day	EPA, 2004	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.1	µg/l	See Table 3.1	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.2	mg/m^3	See Table 3.2	CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration, Resident	30	years	EPA, 1991	CA calculated using Johnson and Ettinger model
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
	Construction Worker	Adult	Water Vapors at Excavation Pit	CW	Chemical Concentration in Water	See Table 3.6.RME	µg/l	See Table 3.6.RME	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	calculated	mg/m^3		CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	8	hr/day	(1)	
				EF	Exposure Frequency	125	days/year	(2)	
				ED	Exposure Duration	1	years	EPA, 1991	CA calculated using Virginia Voluntary Remediation
				CF1	Conversion Factor 1	1/24	day/hour	- -	Program Method
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	

Notes:

(1) Assumed that worker would be present 8 hrs per day.

(2) Assumed contact with groundwater during construction project would be 125 days/year.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.

EPA, 2004 . Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment (Final). EPA/540/R/99/005. July 2004.

TABLE 4.1.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURE

Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Industrial Worker	Adult	Indoor Air	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.1.CTE	mg/m^3	See Table 3.1.CTE	CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	8	hr/day	(1)	
				EF	Exposure Frequency	60	days/year	(2)	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration	9	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9,125	days	EPA, 1989	

Notes:

(1) Assumed that worker would be present 8 hrs per day.

(2) Site-specific information indicates workers are present at bunkers up to 5 days per month.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.

TABLE 4.1.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-W	Ingestion Rate of Water	1.4	liters/day	EPA, 1993	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				ED	Exposure Duration	9	years	EPA, 1993	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
		Child	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) =
				IR-W	Ingestion Rate of Water	1	liters/day	EPA, 1997	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				ED	Exposure Duration	6	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
		Child/Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) =
				IR-W-A	Ingestion Rate of Water, Adult	1.4	liters/day	EPA, 1993	CW x IR-W-Adj x EF x CF2 x 1/AT
				IR-W-C	Ingestion Rate of Water, Child	1	liters/day	EPA, 1997	
				IR-W-Adj	Ingestion Rate of Water, Age-adjusted	0.58	liter-year/kg-day	calculated	IR-W-Adj (liter-year/kd-day) =
				EF	Exposure Frequency	234	days/year	EPA, 1993	(ED-C x IR-W-C / BW-C) +
				ED-A	Exposure Duration, Adult	9	years	EPA, 1993	(ED-A x IR-W-A / BW-A)
				ED-C	Exposure Duration, Child	6	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW-A	Body Weight , Adult	70	kg	EPA, 1991	
				BW-C	Body Weight, Child	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	

TABLE 4.1.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	Calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	Chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	Chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	Chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	Chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	Chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	0.25	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	18,000	cm^2	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				ED	Exposure Duration	9	years	EPA, 2001	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + 3B^2)/(1+B)^2)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
		Child	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	Calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	Chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	Chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	Chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	Chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	Chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	0.33	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	6,600	cm^2	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				ED	Exposure Duration	6	years	EPA, 2001	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	15	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + 3B^2)/(1+B)^2)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

TABLE 4.1.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Child/Adult	Tap Water	CW	Chemical Concentration in Water	See Table 3.2.CTE	µg/l	See Table 3.2.CTE	CDI (mg/kg-day) = DA-Adj x EF x 1/AT
				DAevent-A	Dermally Absorbed Dose per Event, Adult	Calculated	mg/cm^2-event	calculated	
				DAevent-C	Dermally Absorbed Dose per Event, Child	Calculated	mg/cm^2-event	calculated	DA-Adj = (Daevent-A x SA-A x ED-A x 1/BW-A)
				DA-Adj	Dermally Absorbed Dose, Age-adjusted	Calculated	mg-year/event-kg	calculated	+ (Daevent-C x SA-C x ED-C x 1/BW-C)
				FA	Fraction absorbed water	Chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	Chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	Chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	Chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	Chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}-A	Event Time, Adult	0.25	hr/event	EPA, 2004	t_{event}<t*: DAevent (mg/cm^2-event) =
				t_{event}-C	Event Time, Child	0.33	hr/event	EPA, 2004	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				SA-A	Skin Surface Area, Adult	18,000	cm^2	EPA, 2004	x CF2 x CF3
				SA-C	Skin Surface Area, Child	6,600	cm^2	EPA, 2004	
				EV	Event Frequency	1	events/day	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				EF	Exposure Frequency	234	days/year	EPA, 1993	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				ED-A	Exposure Duration, Adult	9	years	EPA, 2001	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				ED-C	Exposure Duration, Child	6	years	EPA, 2001	
				BW-A	Body Weight, Adult	70	kg	EPA, 1991	
				BW-C	Body Weight, Child	15	ke	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
	Construction Worker	Adult	Water in Excavation Pit	CW	Chemical Concentration in Water	See Table 3.5.CTE	µg/l	See Table 3.5.CTE	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	Calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	Chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	Chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	Chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	Chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	Chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	4	hr/day	(1)	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	EPA, 2001, (3)	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2001	x CF2 x CF3
				EF	Exposure Frequency	125	days/year	(2)	
				ED	Exposure Duration	1	years	EPA, 1991	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

TABLE 4.1.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name

(1) Professional judgement assuming 1/2 RME value for CT.
(2) Assumed contact with groundwater during construction project would be 125 days/year.
(3) Skin surface area in contact with groundwater assumed to be hands, forearms, lower legs, and feet.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.
EPA, 1993: Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.
EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.
EPA, 2001: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.
EPA, 2004 . Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment (Final). EPA/540/R/99/005. July 2004.

TABLE 4.3.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
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	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/kg-day) =
				CAa	Chemical Concentration in Air	Calculated	mg/m^3	Calculated	CAa x ETa x EDa x EF x CF1 x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				EDa	Exposure Duration	9	years	EPA, 1993	Use Foster & Chrostowski Shower model to
				ETa	Exposure Time	0.25	hr/day	EPA, 2004	calculate Ca-a and Ca-c
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.4.CTE	mg/m^3	See Table 3.4.CTE	CA x ET x ED x EF x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	234	days/year	EPA, 1993	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration	9	years	EPA, 1993	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Child	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CAc	Chemical Concentration in Air	Calculated	mg/m^3	Calculated	CA_c x ET_c x ED_c x EF x CF1 x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				EDc	Exposure Duration	6	years	EPA, 1991	Use Foster & Chrostowski Shower model to
				ETc	Exposure Time	0.33	hr/day	EPA, 2004	calculate Ca-a and Ca-c
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.4.CTE	mg/m^3	See Table 3.4.CTE	CA x ET x ED x EF x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	234	days/year	EPA, 1993	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration	6	years	EPA, 1991	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	

TABLE 4.3.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY
Site 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Groundwater
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/Adult	Water Vapors at Showerhead	CW	Chemical Concentration in Water	See Table 3.3.CTE	µg/l	See Table 3.3.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				Ca-a	Air Concentration for shower, Adult	Calculated	mg/m^3	Calculated	(CAc x ETc x EDc + CAa x ETa x EDa)
				Ca-c	Air Concentration for shower, child	Calculated	mg/m^3	Calculated	x EF x CF1 x 1/AT
				EF	Exposure Frequency	234	days/year	EPA, 1993	
				EDa	Exposure Duration, Adult	9	years	EPA, 1993	Use Foster & Chrostowski Shower model to
				EDc	Exposure Duration, Child	6	years	EPA, 1991	calculate Ca-a and Ca-c
				ETa	Exposure Time	0.25	hr/day	EPA, 2004	
				ETc	Exposure Time	0.33	hr/day	EPA, 2004	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
			Indoor Air	CW	Chemical Concentration in Water	See Table 3.1	µg/l	See Table 3.1	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	See Table 3.2	mg/m^3	See Table 3.2	CA x ET x ED x EF x CF1 x 1/AT
				ET	Exposure Time	24	hr/day	EPA, 1991	
				EF	Exposure Frequency	234	days/year	EPA, 1993	CA calculated using Johnson and Ettinger model
				ED	Exposure Duration, Resident	15	years	EPA, 1993	
				CF1	Conversion Factor 1	1/24	day/hour	- -	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
	Construction Worker	Adult	Water Vapors at Excavation Pit	CW	Chemical Concentration in Water	See Table 3.6.CTE	µg/l	See Table 3.6.CTE	Chronic Daily Intake (CDI) (mg/m3) =
				CA	Chemical Concentration in Air	calculated	mg/m^3		CA x ET x EF x ED x CF1 x 1/AT
				ET	Exposure Time	4	hr/day	(1)	
				EF	Exposure Frequency	125	days/year	(2)	
				ED	Exposure Duration	1	years	EPA, 1991	CA calculated using Virginia Voluntary Remediation
				CF1	Conversion Factor 1	1/24	day/hour	- -	Program Method
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	

TABLE 5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Site 34, NWS Yorktown

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (MM/DD/YY)
1,1,2-Trichloroethane	Chronic	4.0E-03	mg/kg-day	generally > 50%	4.0E-03	mg/kg-day	Blood	1000/1	IRIS	4/25/2011
	Subchronic	4.0E-02	mg/kg-day	generally > 50%	4.0E-02	mg/kg-day	Blood	100	HEAST	07/01/97
1,1-Dichloroethane	Chronic	2.0E-01	mg/kg-day	generally > 50%	2.0E-01	mg/kg-day	Kidney	3000/1	PPRTV	9/27/2006
	Subchronic	2.0E+00	mg/kg-day	generally > 50%	2.0E+00	mg/kg-day	Kidney	100	HEAST	7/1/1997
1,1-Dichloroethene	Chronic	5.0E-02	mg/kg-day	generally > 50%	5.0E-02	mg/kg-day	Liver	100/1	IRIS	4/25/2011
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane	Chronic	2.0E-02	mg/kg-day	generally > 50%	2.0E-02	mg/kg-day	Kidney	3000	PPRTV	10/31/2002
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethene	Chronic	1.0E-02	mg/kg-day	Generally > 50%	1.0E-02	mg/kg-day	Liver, Body Weight	100/1	IRIS	4/25/2011
	Subchronic	1.0E-01	mg/kg-day	Generally > 50%	1.0E-01	mg/kg-day	Liver	100	HEAST	7/1/1997
Trichloroethene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethene	Chronic	1.0E-02	mg/kg/day	generally > 50%	1.0E-02	mg/kg/day	Blood	3000	PPRTV	9/24/2002
	Subchronic	1.0E-01	mg/kg/day	N/A	1.0E-01	mg/kg/day	Blood	300	HEAST	7/1/1997
Nitrobenzene	Chronic	2.0E-03	mg/kg/day	generally > 50%	2.0E-03	mg/kg/day	Blood	10000/1	IRIS	4/25/2011
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RDX	Chronic	3.0E-03	mg/kg-day	generally > 50%	3.0E-03	mg/kg-day	Prostate	100/1	IRIS	4/25/2011
	Subchronic	3.0E-03	mg/kg-day	generally > 50%	3.0E-03	mg/kg-day	Prostate	100/1	HEAST	7/1/1997
Aluminum	Chronic	1.0E+00	mg/kg-day	N/A	1.0E+00	mg/kg-day	Neurological	100	PPRTV	10/23/2006
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	Chronic	3.0E-04	mg/kg-day	95%	3.0E-04	mg/kg-day	Skin, Vascular	3/1	IRIS	4/25/2011
	Subchronic	3.0E-04	mg/kg-day	95%	3.0E-04	mg/kg-day	Skin, Vascular	3	HEAST	7/01/1997
Cadmium	Chronic	5.0E-04	mg/kg-day	5%	2.5E-05	mg/kg-day	Kidney	10/1	IRIS	4/25/2011
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium	Chronic	3.0E-03	mg/kg-day	2.5%	7.5E-05	mg/kg-day	Not identified	300/3	IRIS	4/25/2011
	Subchronic	2.0E-02	mg/kg-day	2.5%	5.0E-04	mg/kg-day	Not identified	100	HEAST	7/01/1997
Cobalt	Chronic	3.0E-04	mg/kg-day	N/A	3.0E-04	mg/kg/day	Thyroid	1000	PPRTV	08/25/08
	Subchronic	3.0E-03	mg/kg-day	N/A	3.0E-03	mg/kg/day	Thyroid	300	PPRTV	08/25/08
Iron	Chronic	7.0E-01	mg/kg/day	N/A	7.0E-01	mg/kg/day	Gastrointestinal	1	PPRTV	7/29/2005
	Subchronic	7.0E-01	mg/kg/day	N/A	7.0E-01	mg/kg/day	Gastrointestinal	1	PPRTV	7/29/2005

TABLE 5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Site 34, NWS Yorktown

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (MM/DD/YY)
Manganese	Chronic	1.4E-01	mg/kg-day	4%	5.6E-03	mg/kg-day	Central Nervous System	1/1	IRIS	4/25/2011
	Subchronic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	Chronic	2.0E-02	mg/kg-day	4%	8.0E-04	mg/kg-day	Decreased Body Weight	300/1	IRIS	4/25/2011
	Subchronic	2.0E-02	mg/kg-day	4%	8.0E-04	mg/kg-day	Whole body	300	HEAST	07/01/97
Vanadium	Chronic	5.0E-03	mg/kg-day	2.6%	1.3E-04	mg/kg-day	Kidney	300	RSL	02/08/10
	Subchronic	7.0E-03	mg/kg-day	2.6%	1.8E-04	mg/kg-day	Lifetime	100	HEAST	07/01/97

(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health Evalution Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Final. Section 4.2 and Exhibit 4-1. USEPA recommends that the oral RfD should not be adjusted to estimate the absorbed dose for compounds when the absorption efficiency is greater than 50%. Constituents that do not have oral absorption efficiencies reported on this table were assumed to have an oral absorption efficiency of 100%.

(2) Provide equation for derivation in text.

(3) For IRIS values, provide the date IRIS was searched.
For HEAST values, provide the date of HEAST.
For PPRTV values, provide the date of the article provided by NCEA.

Definitions: IRIS = Integrated Risk Information System
HEAST= Health Effects Assessment Summary Tables
PPRTV = Provisional Peer-Reviewed Toxicity Values
N/A = Not Applicable or Not Available.

TABLE 5.2

NON-CANCER TOXICITY DATA -- INHALATION

Site 34, NWS Yorktown

Chemical of Potential Concern	Chronic/ Subchronic	Value Inhalation RfC	Units	Adjusted Inhalation RfD (1)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfC:RfD: Target Organ	Dates (2) (MM/DD/YY)
1,1,2-Trichloroethane	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethane	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethene	Chronic	2.0E-01	mg/m^3	5.7E-02	mg/kg-day	Liver	30	IRIS	4/25/2011
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane	Chronic	2.4E+00	mg/m^3	6.9E-01	mg/kg-day	Blood, Kidney, Liver	N/A	ATSDR	9/1/2001
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethene	Chronic	2.7E-01	mg/m^3	7.7E-02	mg/kg-day	Neurological		ASTDR	09/1997
	Subchronic								
Trichloroethene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethene	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	Chronic	9.0E-03	mg/m^3	2.6E-03	mg/kg-day	Lung, Nose	10000	IRIS	4/25/2011
	Subchronic	1.8E-02	mg/m3	5.0E-03	mg/kg-day	Blood, Adrenal Gland, Kidney, Liver	1000	HEAST	7/1/1997
RDX	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aluminum	Chronic	5.0E-03	mg/m^3	1.4E-03	mg/kg-day	Neurological	300	PPRTV	10/23/2006
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	Chronic	1.5E-05	mg/m^3	4.3E-06	mg/kg-day	Developmental, Cardiovascular, Nervous System	3/1	Cal EPA	4/25/2011
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cadmium	Chronic	1.00E-05	mg/m3	2.9E-06	mg/kg-day	Kidney	N/A	ATSDR	9/08
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium	Chronic	1.0E-04	mg/m3	2.9E-05	mg/kg-day	Respiratory System	300/1	IRIS	4/25/2011
	Subchronic	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	Chronic	6.0E-06	mg/m3	1.7E-06	mg/kg-day	Respiratory System	300	PPRTV	08/25/08
	Subchronic	NA	NA	NA	NA	NA	NA	NA	NA
Iron	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese	Chronic	5.0E-05	mg/m^3	1.4E-05	mg/kg-day	CNS	1000/1	IRIS	4/25/2011
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel	Chronic	9.0E-05	mg/m^3	2.6E-05	mg/kg-day	Respiratory System	30	ATSDR	4.0E+04
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Subchronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(1) Provide equation used for derivation in text.

(2) For IRIS values, provide the date IRIS was searched.
For PPRTV values, provide the date of the article/toxicity profile from PPTRV.
For Cal-EPA values, provide the date Cal-EPA database was searched.
For HEAST values, provide the date of HEAST.

Definitions: IRIS = Integrated Risk Information System
PPRTV = Provisional Peer-Reviewed Toxicity Values
Cal-EPA = California EPA
HEAST= Health Effects Assessment Summary Tables
N/A = Not Applicable

TABLE 6.1

CANCER TOXICITY DATA -- ORAL/DERMAL

Site 34, NWS Yorktown

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (1)	Units	EPA Carcinogen Group	Source	Date (2) (MM/DD/YY)
1,1,2-Trichloroethane	5.7E-02	Generally > 50%	5.7E-02	$(mg/kg\text{-}day)^{-1}$	C	IRIS	4/25/2011
1,1-Dichloroethane	5.7E-03	Generally > 50%	5.7E-03	$(mg/kg\text{-}day)^{-1}$	C	CalEPA	4/25/2011
1,1-Dichloroethene	N/A	N/A	N/A	N/A	C	IRIS	4/25/2011
1,2-Dichloroethane	9.1E-02	Generally > 50%	9.1E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	4/25/2011
Tetrachloroethene	5.4E-01	Generally > 50%	5.4E-01	$(mg/kg\text{-}day)^{-1}$	2B	CalEPA	4/25/2011
Trichloroethene	5.9E-03	Generally > 50%	5.9E-03	$(mg/kg\text{-}day)^{-1}$	2A	CalEPA	4/25/2011
cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RDX	1.1E-01	Generally > 50%	1.1E-01	$(mg/kg\text{-}day)^{-1}$	C	IRIS	4/25/2011
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	1.5E+00	95%	1.5E+00	$(mg/kg\text{-}day)^{-1}$	A	IRIS	4/25/2011
Cadmium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium	5.0E-01	2.5%	5.0E-01	$(mg/kg\text{-}day)^{-1}$	D	New Jersey	N/A
Cobalt	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese (water)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health Evalution Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Final. Section 4.2 and Exhibit 4-1. USEPA recommends that the oral RfD should not be adjusted to estimate the absorbed dose for compounds when the absorption efficiency is greater than 50%. Constituents that do not have oral absorption efficiencies reported on this table were assumed to have an oral absorption efficiency of 100%.

(2) For IRIS values, provide the date IRIS was searched.
For Cal-EPA values, provide the date Cal-EPA database was searched.

Definitions:

N/A-Not available

IRIS = Integrated Risk Information System

CalEPA = California EPA

New Jersey = New Jersey EPA

EPA Carcinogen Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

TABLE 6.2

CANCER TOXICITY DATA -- INHALATION

Site 34, NWS Yorktown

Chemical of Potential Concern	Unit Risk	Units	Adjustment (1)	Inhalation Cancer Slope Factor	Units	Weight of Evidence/ Cancer Guidance Description	Source	Date (2) (MM/DD/YY)
1,1,2-Trichloroethane	1.6E-05	$(ug/m3)^{-1}$	3500	5.7E-02	$(mg/kg\text{-}day)^{-1}$	C	IRIS	4/25/2011
1,1-Dichloroethane	1.6E-06	$(ug/m3)^{-1}$	3500	5.7E-03	$(mg/kg\text{-}day)^{-1}$	C	CalEPA	4/25/2011
1,1-Dichloroethene	N/A	N/A	N/A	N/A	N/A	C	IRIS	4/25/2011
1,2-Dichloroethane	2.6E-05	$(ug/m3)^{-1}$	3500	9.1E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	4/25/2011
Tetrachloroethene	5.9E-06	$(ug/m3)^{-1}$	3500	2.1E-02	$(mg/kg\text{-}day)^{-1}$	2B	CalEPA	4/25/2011
Trichloroethene	2.0E-06	$(ug/m3)^{-1}$	3500	7.0E-03	$(mg/kg\text{-}day)^{-1}$	2A	CalEPA	4/25/2011
cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	4.0E-05	$(ug/m3)^{-1}$	3500	1.4E-01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	4/25/2011
RDX	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	4.3E-03	$(ug/m3)^{-1}$	3500	1.5E+01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	4/25/2011
Cadmium	1.8E-03	$(ug/m3)^{-1}$	3500	6.3E+00	$(mg/kg\text{-}day)^{-1}$	B1	IRIS	4/25/2011
Chromium	8.4E-02	$(ug/m3)^{-1}$	3500	2.9E+02	$(mg/kg\text{-}day)^{-1}$	A	IRIS	4/25/2011
Cobalt	9.0E-03	$(ug/m3)^{-1}$	3500	3.2E+01	$(mg/kg\text{-}day)^{-1}$	B1	PPRTV	8/25/2008
Iron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese (water)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(1) Adjustment Factor applied to Unit Risk to calculate Inhalation Slope Factor = 70kg x 1/20m3/day x 1000ug/mg

(2) For IRIS values, provide the date IRIS was searched.
For Cal-EPA values, provide the date Cal-EPA database was searched.

Definitions:

IRIS = Integrated Risk Information System

CalEPA = California EPA

N/A = Not Available

EPA Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

TABLE 7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Current/Future
Receptor Population: Industrial Worker
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	
Groundwater	Air	Indoor Air	Inhalation													
				1,1-Dichloroethane	4.8E-05	mg/m^3	9.4E-07	mg/m^3	1.6E-06	(ug/m3)$^{-1}$	1.5E-09	2.6E-06	mg/m^3	N/A		N/A
				1,1-Dichloroethene	1.4E-03	mg/m^3	2.8E-05	mg/m^3	N/A	(ug/m3)$^{-1}$	N/A	7.9E-05	mg/m^3	2.0E-01	mg/m^3	3.9E-04
				Trichloroethene	1.7E-03	mg/m^3	3.4E-05	mg/m^3	2.0E-06	(ug/m3)$^{-1}$	6.8E-08	9.5E-05	mg/m^3	N/A		N/A
				cis-1,2-Dichloroethene	1.1E-04	mg/m^3	2.1E-06	mg/m^3	N/A	(ug/m3)$^{-1}$	N/A	6.0E-06	mg/m^3	N/A		N/A
			Exp. Route Total								6.9E-08					3.9E-04
		Exposure Point Total									6.9E-08					3.9E-04
	Exposure Medium Total										6.9E-08					3.9E-04
Groundwater Total											6.9E-08					3.9E-04
										Total of Receptor Risks Across All Media	6.9E-08			Total of Receptor Hazards Across All Media		3.9E-04

Notes-
NA = Not applicable.

TABLE 7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Groundwater	Tap Water	Ingestion													
				1,1,2-Trichloroethane	1.6E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.4E-05	mg/kg/day	4.0E-03	mg/kg/day	1.1E-02
				1,1-Dichloroethane	4.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.2E-03	mg/kg/day	2.0E-01	mg/kg/day	6.2E-03
				1,1-Dichloroethene	2.9E+02	ug/L	N/A	N/A	N/A	N/A	N/A	7.8E-03	mg/kg/day	5.0E-02	mg/kg/day	1.6E-01
				1,2-Dichloroethane	2.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	6.8E-05	mg/kg/day	2.0E-02	mg/kg/day	3.4E-03
				Tetrachloroethene	4.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.2E-04	mg/kg/day	1.0E-02	mg/kg/day	1.2E-02
				Trichloroethene	1.4E+03	ug/L	N/A	N/A	N/A	N/A	N/A	3.8E-02	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	9.8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.7E-03	mg/kg/day	1.0E-02	mg/kg/day	2.7E-01
				Nitrobenzene	9.9E-02	ug/L	N/A	N/A	N/A	N/A	N/A	2.7E-06	mg/kg/day	2.0E-03	mg/kg/day	1.4E-03
				RDX	1.8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	4.8E-04	mg/kg/day	3.0E-03	mg/kg/day	1.6E-01
				Arsenic-dissolved	4.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.3E-04	mg/kg/day	3.0E-04	mg/kg/day	4.5E-01
				Chromium-dissolved	1.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.1E-05	mg/kg/day	3.0E-03	mg/kg/day	1.4E-02
			Exp. Route Total								N/A					1.1E+00
			Dermal Absorption													
				1,1,2-Trichloroethane	1.6E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.1E-06	mg/kg/day	4.0E-03	mg/kg/day	1.0E-03
				1,1-Dichloroethane	4.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	9.7E-05	mg/kg/day	2.0E-01	mg/kg/day	4.9E-04
				1,1-Dichloroethene	2.9E+02	ug/L	N/A	N/A	N/A	N/A	N/A	1.1E-03	mg/kg/day	5.0E-02	mg/kg/day	2.1E-02
				1,2-Dichloroethane	2.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.4E-06	mg/kg/day	2.0E-02	mg/kg/day	1.7E-04
				Tetrachloroethene	4.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	6.9E-05	mg/kg/day	1.0E-02	mg/kg/day	6.9E-03
				Trichloroethene	1.4E+03	ug/L	N/A	N/A	N/A	N/A	N/A	6.4E-03	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	9.8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	4.6E-04	mg/kg/day	1.0E-02	mg/kg/day	4.6E-02
				Nitrobenzene	9.9E-02	ug/L	N/A	N/A	N/A	N/A	N/A	8.5E-07	mg/kg/day	2.0E-03	mg/kg/day	4.3E-04
				RDX	1.8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	4.3E-06	mg/kg/day	3.0E-03	mg/kg/day	1.4E-03
				Arsenic-dissolved	4.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.0E-07	mg/kg/day	3.0E-04	mg/kg/day	2.3E-03
				Chromium-dissolved	1.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.3E-07	mg/kg/day	7.5E-05	mg/kg/day	5.7E-03
			Exp. Route Total								N/A					8.6E-02
		Exposure Point Total									N/A					1.2E+00
	Exposure Medium Total										N/A					1.2E+00

TABLE 7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Air	Water Vapors at Showerhead	Inhalation													
				1,1,2-Trichloroethane	2.4E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	5.4E-05	mg/kg/day	N/A		N/A
				1,1-Dichloroethane	9.4E-02	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.2E-03	mg/kg/day	N/A		N/A
				1,1-Dichloroethene	6.2E-01	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg/day	2.0E-01	mg/m^3	7.2E-02
				1,2-Dichloroethane	4.5E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg/day	2.4E+00	mg/m^3	4.4E-05
				Tetrachloroethene	7.1E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.6E-04	mg/kg/day	2.7E-01	mg/m^3	6.1E-04
				Trichloroethene	2.6E+00	mg/m^3	N/A	N/A	N/A	N/A	N/A	6.0E-02	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	2.0E-01	mg/m^3	N/A	N/A	N/A	N/A	N/A	4.7E-03	mg/kg/day	N/A		N/A
				Nitrobenzene	1.8E-05	mg/m^3	N/A	N/A	N/A	N/A	N/A	4.2E-07	mg/kg/day	9.0E-03	mg/m^3	4.7E-05
			Exp. Route Total								N/A					7.2E-02
		Exposure Point Total									N/A					7.2E-02
		Indoor Air	Inhalation	1,1-Dichloroethane	1.1E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	3.8E-05	mg/m^3	N/A		N/A
				1,1-Dichloroethene	3.4E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.1E-03	mg/m^3	2.0E-01	mg/m^3	5.6E-03
				Trichloroethene	4.1E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.4E-03	mg/m^3	N/A		N/A
				cis-1,2-Dichloroethene	2.6E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	8.5E-05	mg/m^3	N/A		N/A
			Exp. Route Total								N/A					5.6E-03
		Exposure Point Total									N/A					5.6E-03
	Exposure Medium Total										N/A					7.8E-02
Medium Total											N/A					1.2E+00
									Total of Receptor Risks Across All Media		N/A			Total of Receptor Hazards Across All Media		1.2E+00

Notes-
N/A = Not applicable.
DAevent for exposure to groundwater while showering is calculated on Table 7.2.RME Supplement A.
Inhalation exposure for shower calculated on Table 7.2.RME Supplement C.

Table 7.2.RME Supplement A
Calculation of DAevent
Resident Adult Ground Water
Site 34, NWS Yorktown

Chemical of Potential Concern	Water Concentration (CW) (µg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
1,1,2-Trichloroethane	1.6E+00	6.4E-03	2.9E-02	6.0E-01	1.4E+00	1.0E+00	0.58	1.7E-08	2
1,1-Dichloroethane	4.5E+01	6.7E-03	2.6E-02	3.8E-01	9.2E-01	1.0E+00	0.58	4.0E-07	2
1,1-Dichloroethene	2.9E+02	1.2E-02	4.4E-02	3.7E-01	8.9E-01	1.0E+00	0.58	4.3E-06	2
1,2-Dichloroethane	2.5E+00	4.2E-03	1.6E-02	3.8E-01	9.2E-01	1.0E+00	0.58	1.4E-08	2
Tetrachloroethene	4.2E+00	3.3E-02	1.7E-01	9.1E-01	2.2E+00	1.0E+00	0.58	2.8E-07	2
Trichloroethene	1.4E+03	1.2E-02	5.1E-02	5.8E-01	1.4E+00	1.0E+00	0.58	2.6E-05	2
cis-1,2-Dichloroethene[2]	9.8E+01	1.5E-02	5.6E-02	3.7E-01	8.8E-01	1.0E+00	0.58	1.9E-06	2
Nitrobenzene[2]	9.9E-02	2.3E-02	2.3E-02	5.1E-01	1.2E+00	1.0E+00	0.58	3.5E-09	2
RDX[2]	1.8E+01	3.5E-04	2.0E-03	1.8E+00	4.4E+00	1.0E+00	0.58	1.8E-08	2
Arsenic-dissolved	4.9E+00	1.0E-03	NA	NA	NA	NA	0.58	2.8E-09	1
Chromium-dissolved	1.5E+00	2.0E-03	N/A	N/A	N/A	N/A	0.58	1.7E-09	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.2.RME Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.2.RME Supplement B
Calculation of DAevent
Resident
Site 34, NWS Yorktown

Chemical	**MW**	**Kp (cm/hr)**	**B[1]**	**Dsc/lsc[1]**	**lsc (cm)**	**Dsc (cm^2/hr)**	**τ[1] (hr)**	**c[1]**	**b[1]**	**t*[1] (hr)**
cis-1,2-Dichloroethene	96.94	1.5E-02	5.6E-02	4.5E-04	1.0E-03	4.5E-07	3.7E-01	3.7E-01	3.4E-01	8.8E-01
nitrobenzene	123	5.4E-03	2.3E-02	3.2E-04	1.0E-03	3.2E-07	5.1E-01	3.5E-01	3.2E-01	1.2E+00
RDX	222.12	3.5E-04	2.0E-03	9.0E-05	1.0E-03	9.0E-08	1.8E+00	3.3E-01	3.0E-01	4.4E+00

1. Equations from *Dermal Exposure Assessment: Principles and Applications* . EPA/600/8-91/011B. January 1992.
Parameter values from RAIS database (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).

Table 7.2.RME Supplement C

Inhalation Exposure Concentrations from Foster and Chrostowski Shower Model

Adult Resident

Site 34, NWS Yorktown

Chemical of Potential Concern	Exposure Point Concentration Cwo (µg/L)	Molecular weight (MW) (g/mole)	Henry's Law Constant (H) (atm-m^3/mole)	Kg (VOC) (cm/hr)	Kl (VOC) (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd (µg/L)	S (µg/m^3 -min)	Ca (mg/m^3)
1,1,2-Trichloroethane	1.6E+00	1.3E+02	8.2E-04	1.1E+03	1.1E+01	8.8E+00	1.2E+01	1.5E-01	1.3E-01	2.4E-03
1,1-Dichloroethane	4.5E+01	9.9E+01	5.6E-03	1.3E+03	1.3E+01	1.3E+01	1.7E+01	6.0E+00	5.0E+00	9.4E-02
1,1-Dichloroethene	2.9E+02	9.7E+01	2.6E-02	1.3E+03	1.3E+01	1.3E+01	1.8E+01	4.0E+01	3.3E+01	6.2E-01
1,2-Dichloroethane	2.5E+00	9.9E+01	1.2E-03	1.3E+03	1.3E+01	1.1E+01	1.5E+01	2.9E-01	2.4E-01	4.5E-03
Tetrachloroethene	4.2E+00	1.7E+02	1.8E-02	9.9E+02	1.0E+01	1.0E+01	1.4E+01	4.5E-01	3.8E-01	7.1E-03
Trichloroethene	1.4E+03	1.3E+02	9.9E-03	1.1E+03	1.2E+01	1.1E+01	1.5E+01	1.7E+02	1.4E+02	2.6E+00
cis-1,2-Dichloroethene	9.8E+01	9.7E+01	4.1E-03	1.3E+03	1.3E+01	1.3E+01	1.7E+01	1.3E+01	1.1E+01	2.0E-01
Nitrobenzene	9.9E-02	1.2E+02	2.4E-05	1.1E+03	1.2E+01	1.0E+00	1.4E+00	1.2E-03	9.7E-04	1.8E-05

Variables	Units	Exposure Assumptions
Kg(VOC) = gas-film mass transfer coefficient	cm/hr	Solved by Eq 1
Kl(VOC) = liquid-film mass transfer coefficient	cm/hr	Solved by Eq 2
KL = overall mass transfer coefficient	cm/hr	Solved by Eq 3
Kal = adjusted overall mass transfer coeff.	cm/hr	Solved by Eq 4
Tl = Calibration temp. of water	K (20C +273)	293
Ts = Shower water temperature	k (45C)	318
Us = water viscosity at Ts	centipoise	0.596
Ul = water viscosity at Tl	cp	1.002
Cwd = conc. leaving droplets after time sdt	µg/l	Solved by Eq 5
sdt = shower droplet drop time	sec	0.5
d = shower droplet diameter	mm	1
FR = shower water flow rate	l/min	10
SV = shower room air volume	m^3	12
S = indoor VOC generation rate	µg/m^3-min	Solved by Eq 6
VR = ventilation rate	l/min	13.8
BW = body weight	kg	70
Ds = duration of shower	min	30
Dt = total duration in shower room	min	60
R = air exchange rate	min^{-1}	0.0083
Ca = indoor air concentration of VOCs	µg/m^3	Solved by Eq 7

Equation 1:	Kg(VOC) =	$3000 * (18 / MW)^{0.5}$
Equation 2:	Kl(VOC) =	$20 * (44 / MW)^{0.5}$
Equation 3:	KL =	$((1 / Kl(VOC)) + (0.024 / (Kg (VOC) * H)))^{-1}$
Equation 4:	Kal =	$(KL * (((Tl * Us) / (Ts * Ul))^{-0.5}))$
Equation 5:	Cwd =	(Cwo * (1-EXP((-1 * Kal * sdt)/(60 * d))))
Equation 6:	S =	(Cwd * FR / SV)
Equation 7:	Ca =	If t>Ds [(S / R) * (Ds + (EXP(-R * Dt) / R) -(EXP(R *(Ds - Dt)) / R)] / Dt * 1/1000

TABLE 7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Groundwater	Tap Water	Ingestion													
				1,1,2-Trichloroethane	1.6E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.0E-04	mg/kg/day	4.0E-03	mg/kg/day	2.6E-02
				1,1-Dichloroethane	4.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.9E-03	mg/kg/day	2.0E-01	mg/kg/day	1.4E-02
				1,1-Dichloroethene	2.9E+02	ug/L	N/A	N/A	N/A	N/A	N/A	1.8E-02	mg/kg/day	5.0E-02	mg/kg/day	3.7E-01
				1,2-Dichloroethane	2.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.0E-03
				Tetrachloroethene	4.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.7E-04	mg/kg/day	1.0E-02	mg/kg/day	2.7E-02
				Trichloroethene	1.4E+03	ug/L	N/A	N/A	N/A	N/A	N/A	8.9E-02	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	9.8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	6.3E-03	mg/kg/day	1.0E-02	mg/kg/day	6.3E-01
				Nitrobenzene	9.9E-02	ug/L	N/A	N/A	N/A	N/A	N/A	6.4E-06	mg/kg/day	2.0E-03	mg/kg/day	3.2E-03
				RDX	1.8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.1E-03	mg/kg/day	3.0E-03	mg/kg/day	3.8E-01
				Arsenic-dissolved	4.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.1E-04	mg/kg/day	3.0E-04	mg/kg/day	1.0E+00
				Chromium-dissolved	1.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	9.5E-05	mg/kg/day	3.0E-03	mg/kg/day	3.2E-02
			Exp. Route Total								N/A					2.5E+00
			Dermal Absorption													
				1,1,2-Trichloroethane	1.6E+00	ug/L	N/A	N/A	N/A	N/A	N/A	9.2E-06	mg/kg/day	4.0E-03	mg/kg/day	2.3E-03
				1,1-Dichloroethane	4.5E+01	ug/L	N/A	N/A	N/A	N/A	N/A	2.3E-04	mg/kg/day	2.0E-01	mg/kg/day	1.1E-03
				1,1-Dichloroethene	2.9E+02	ug/L	N/A	N/A	N/A	N/A	N/A	2.4E-03	mg/kg/day	5.0E-02	mg/kg/day	4.9E-02
				1,2-Dichloroethane	2.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.8E-06	mg/kg/day	2.0E-02	mg/kg/day	3.9E-04
				Tetrachloroethene	4.2E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.6E-04	mg/kg/day	1.0E-02	mg/kg/day	1.6E-02
				Trichloroethene	1.4E+03	ug/L	N/A	N/A	N/A	N/A	N/A	1.4E-02	mg/kg/day	N/A	mg/kg/day	N/A
				cis-1,2-Dichloroethene	9.8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.1E-03	mg/kg/day	1.0E-02	mg/kg/day	1.1E-01
				Nitrobenzene	9.9E-02	ug/L	N/A	N/A	N/A	N/A	N/A	1.9E-06	mg/kg/day	2.0E-03	mg/kg/day	9.6E-04
				RDX	1.8E+01	ug/L	N/A	N/A	N/A	N/A	N/A	9.7E-06	mg/kg/day	3.0E-03	mg/kg/day	3.2E-03
				Arsenic-dissolved	4.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	6.9E-03
				Chromium-dissolved	1.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.3E-06	mg/kg/day	7.5E-05	mg/kg/day	1.7E-02
			Exp. Route Total								N/A					2.0E-01
		Exposure Point Total									N/A					2.7E+00
	Exposure Medium Total										N/A					2.7E+00

TABLE 7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Air	Water Vapors at Showerhead	Inhalation	1,1,2-Trichloroethane	3.8E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.5E-04	mg/m^3	N/A		N/A
				1,1-Dichloroethane	1.5E-01	mg/m^3	N/A	N/A	N/A	N/A	N/A	6.0E-03	mg/m^3	N/A		N/A
				1,1-Dichloroethene	1.0E+00	mg/m^3	N/A	N/A	N/A	N/A	N/A	4.0E-02	mg/m^3	2.0E-01	mg/m^3	2.0E-01
				1,2-Dichloroethane	7.3E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.9E-04	mg/m^3	2.4E+00	mg/m^3	1.2E-04
				Tetrachloroethene	1.1E-02	mg/m^3	N/A	N/A	N/A	N/A	N/A	4.5E-04	mg/m^3	2.7E-01	mg/m^3	1.7E-03
				Trichloroethene	4.2E+00	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.7E-01	mg/m^3	N/A		N/A
				cis-1,2-Dichloroethene	3.3E-01	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.3E-02	mg/m^3	N/A		N/A
				Nitrobenzene	2.9E-05	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.2E-06	mg/m^3	9.0E-03		1.3E-04
			Exp. Route Total								N/A					2.0E-01
		Exposure Point Total									N/A					2.0E-01
		Indoor Air	Inhalation	1,1-Dichloroethane	1.1E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.1E-04	mg/kg/day	N/A		N/A
				1,1-Dichloroethene	3.4E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	3.3E-03	mg/kg/day	2.0E-01	mg/m^3	1.6E-02
				Trichloroethene	4.1E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	4.0E-03	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	2.6E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.5E-04	mg/kg/day	N/A		N/A
			Exp. Route Total								N/A					1.6E-02
		Exposure Point Total									N/A					1.6E-02
	Exposure Medium Total										N/A					2.2E-01
Medium Total											N/A					2.9E+00
									Total of Receptor Risks Across All Media		N/A	Total of Receptor Hazards Across All Media				2.9E+00

Notes-

N/A = Not applicable.

DAevent for exposure to groundwater while bathing is calculated on Table 7.3.RME Supplement A.

Table 7.3.RME Supplement A
Calculation of DAevent
Resident Child Ground Water
Site 34, NWS Yorktown

Chemical of Potential Concern	Water Concentration (CW) (µg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
1,1,2-Trichloroethane	1.6E+00	6.4E-03	2.9E-02	6.0E-01	1.4E+00	1.0E+00	1.0	2.2E-08	2
1,1-Dichloroethane	4.5E+01	6.7E-03	2.6E-02	3.8E-01	9.2E-01	1.0E+00	1.0	5.3E-07	3
1,1-Dichloroethene	2.9E+02	1.2E-02	4.4E-02	3.7E-01	8.9E-01	1.0E+00	1.0	5.8E-06	3
1,2-Dichloroethane	2.5E+00	4.2E-03	1.6E-02	3.8E-01	9.2E-01	1.0E+00	1.0	1.8E-08	3
Tetrachloroethene	4.2E+00	3.3E-02	1.7E-01	9.1E-01	2.2E+00	1.0E+00	1.0	3.7E-07	2
Trichloroethene	1.4E+03	1.2E-02	5.1E-02	5.8E-01	1.4E+00	1.0E+00	1.0	3.4E-05	2
cis-1,2-Dichloroethene[2]	9.8E+01	1.5E-02	5.6E-02	3.7E-01	8.8E-01	1.0E+00	1.0	2.5E-06	3
Nitrobenzene[2]	9.9E-02	2.3E-02	2.3E-02	5.1E-01	1.2E+00	1.0E+00	1.0	4.5E-09	2
RDX[2]	1.8E+01	3.5E-04	2.0E-03	1.8E+00	4.4E+00	1.0E+00	1.0	2.3E-08	2
Arsenic-dissolved	4.9E+00	1.0E-03	NA	NA	NA	NA	1.0	4.9E-09	1
Chromium-dissolved	1.5E+00	2.0E-03	N/A	N/A	N/A	N/A	1.0	3.0E-09	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.2.RME Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.3.RME Supplement B

Inhalation Exposure Concentrations from Foster and Chrostowski Shower Model

Child Resident

Site 34, NWS Yorktown

Chemical of Potential Concern	Exposure Point Concentration Cwo (µg/L)	Molecular weight (MW) (g/mole)	Henry's Law Constant (H) (atm-m^3/mole)	Kg (VOC) (cm/hr)	Kl (VOC) (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd (µg/L)	S (µg/m^3 -min)	Ca (mg/m^3)
1,1,2-Trichloroethane	1.6E+00	1.3E+02	8.2E-04	1.1E+03	1.1E+01	8.8E+00	1.2E+01	1.5E-01	1.3E-01	3.8E-03
1,1-Dichloroethane	4.5E+01	9.9E+01	5.6E-03	1.3E+03	1.3E+01	1.3E+01	1.7E+01	6.0E+00	5.0E+00	1.5E-01
1,1-Dichloroethene	2.9E+02	9.7E+01	2.6E-02	1.3E+03	1.3E+01	1.3E+01	1.8E+01	4.0E+01	3.3E+01	1.0E+00
1,2-Dichloroethane	2.5E+00	9.9E+01	1.2E-03	1.3E+03	1.3E+01	1.1E+01	1.5E+01	2.9E-01	2.4E-01	7.3E-03
Tetrachloroethene	4.2E+00	1.7E+02	1.8E-02	9.9E+02	1.0E+01	1.0E+01	1.4E+01	4.5E-01	3.8E-01	1.1E-02
Trichloroethene	1.4E+03	1.3E+02	9.9E-03	1.1E+03	1.2E+01	1.1E+01	1.5E+01	1.7E+02	1.4E+02	4.2E+00
cis-1,2-Dichloroethene	9.8E+01	9.7E+01	4.1E-03	1.3E+03	1.3E+01	1.3E+01	1.7E+01	1.3E+01	1.1E+01	3.3E-01
Nitrobenzene	9.9E-02	1.2E+02	2.4E-05	1.1E+03	1.2E+01	1.0E+00	1.4E+00	1.2E-03	9.7E-04	2.9E-05

Variables	Units	Exposure Assumptions
Kg(VOC) = gas-film mass transfer coefficient	cm/hr	Solved by Eq 1
Kl(VOC) = liquid-film mass transfer coefficient	cm/hr	Solved by Eq 2
KL = overall mass transfer coefficient	cm/hr	Solved by Eq 3
Kal = adjusted overall mass transfer coeff.	cm/hr	Solved by Eq 4
Tl = Calibration temp. of water	K (20C +273)	293
Ts = Shower water temperature	k (45C)	318
Us = water viscosity at Ts	centipoise	0.596
Ul = water viscosity at Tl	cp	1.002
Cwd = conc. leaving droplets after time sdt	µg/l	Solved by Eq 5
sdt = shower droplet drop time	sec	0.5
d = shower droplet diameter	mm	1
FR = shower water flow rate	l/min	10
SV = shower room air volume	m^3	12
S = indoor VOC generation rate	µg/m^3-min	Solved by Eq 6
Ds = duration of shower	min	60
Dt = total duration in shower room	min	80
R = air exchange rate	min^{-1}	0.0083
Ca = indoor air concentration of VOCs	µg/m^3	Solved by Eq 7

Equation 1:	Kg(VOC) =	$3000 * (18 / MW)^{0.5}$
Equation 2:	Kl(VOC) =	$20 * (44 / MW)^{0.5}$
Equation 3:	KL =	$((1 / Kl(VOC)) + (0.024 / (Kg (VOC) * H)))^{-1}$
Equation 4:	Kal =	$(KL * (((Tl * Us) / (Ts * Ul))^{-0.5}))$
Equation 5:	Cwd =	(Cwo * (1-EXP((-1 * Kal * sdt)/(60 * d))))
Equation 6:	S =	(Cwd * FR / SV)
Equation 7:	Ca =	If t>Ds [(S / R) * (Ds + (EXP(-R * Dt) / R) -(EXP(R *(Ds - Dt)) / R)] / Dt * 1/1000

TABLE 7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/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	
Groundwater	Groundwater	Tap Water	Ingestion													
				1,1,2-Trichloroethane	1.6E+00	ug/L	2.4E-05	mg/kg/day	5.7E-02	(mg/kg-day)$^{-1}$	1.4E-06	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethane	4.5E+01	ug/L	6.7E-04	mg/kg/day	5.7E-03	(mg/kg-day)$^{-1}$	3.8E-06	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethene	2.9E+02	ug/L	4.3E-03	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				1,2-Dichloroethane	2.5E+00	ug/L	3.7E-05	mg/kg/day	9.1E-02	(mg/kg-day)$^{-1}$	3.4E-06	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	4.2E+00	ug/L	6.3E-05	mg/kg/day	5.4E-01	(mg/kg-day)$^{-1}$	3.4E-05	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	1.4E+03	ug/L	2.1E-02	mg/kg/day	5.9E-03	(mg/kg-day)$^{-1}$	1.2E-04	N/A	N/A	N/A	N/A	N/A
				cis-1,2-Dichloroethene	9.8E+01	ug/L	1.5E-03	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				Nitrobenzene	9.9E-02	ug/L	1.5E-06	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				RDX	1.8E+01	ug/L	2.6E-04	mg/kg/day	1.1E-01	(mg/kg-day)$^{-1}$	2.9E-05	N/A	N/A	N/A	N/A	N/A
				Arsenic-dissolved	4.9E+00	ug/L	7.3E-05	mg/kg/day	1.5E+00	(mg/kg-day)$^{-1}$	1.1E-04	N/A	N/A	N/A	N/A	N/A
				Chromium-dissolved	1.5E+00	ug/L	2.2E-05	mg/kg/day	5.0E-01	(mg/kg-day)$^{-1}$	1.1E-05	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								3.2E-04					N/A
			Dermal Absorption													
				1,1,2-Trichloroethane	1.6E+00	ug/L	2.2E-06	mg/kg/day	5.7E-02	(mg/kg-day)$^{-1}$	1.3E-07	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethane	4.5E+01	ug/L	5.3E-05	mg/kg/day	5.7E-03	(mg/kg-day)$^{-1}$	3.0E-07	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethene	2.9E+02	ug/L	5.7E-04	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				1,2-Dichloroethane	2.5E+00	ug/L	1.8E-06	mg/kg/day	9.1E-02	(mg/kg-day)$^{-1}$	1.7E-07	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	4.2E+00	ug/L	3.7E-05	mg/kg/day	5.4E-01	(mg/kg-day)$^{-1}$	2.0E-05	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	1.4E+03	ug/L	3.5E-03	mg/kg/day	5.9E-03	(mg/kg-day)$^{-1}$	2.0E-05	N/A	N/A	N/A	N/A	N/A
				cis-1,2-Dichloroethene	9.8E+01	ug/L	2.5E-04	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				Nitrobenzene	9.9E-02	ug/L	4.6E-07	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				RDX	1.8E+01	ug/L	2.3E-06	mg/kg/day	1.1E-01	(mg/kg-day)$^{-1}$	2.5E-07	N/A	N/A	N/A	N/A	N/A
				Arsenic-dissolved	4.9E+00	ug/L	4.2E-07	mg/kg/day	1.5E+00	(mg/kg-day)$^{-1}$	6.3E-07	N/A	N/A	N/A	N/A	N/A
				Chromium-dissolved	1.5E+00	ug/L	2.5E-07	mg/kg/day	5.0E-01	(mg/kg-day)$^{-1}$	1.3E-07	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								4.2E-05					N/A
		Exposure Point Total									3.6E-04					N/A
	Exposure Medium Total										3.6E-04					N/A

TABLE 7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/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	
	Air	Water Vapors at Showerhead	Inhalation	1,1,2-Trichloroethane	5.5E-02	mg-hr-yr/m^3-day	3.2E-05	mg/m^3	1.6E-05	(µg/m^3)$^{-1}$	5.1E-07	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethane	2.2E+00	mg-hr-yr/m^3-day	1.3E-03	mg/m^3	1.6E-06	(µg/m^3)$^{-1}$	2.0E-06	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethene	1.5E+01	mg-hr-yr/m^3-day	8.3E-03	mg/m^3	N/A	(µg/m^3)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				1,2-Dichloroethane	1.1E-01	mg-hr-yr/m^3-day	6.1E-05	mg/m^3	2.6E-05	(µg/m^3)$^{-1}$	1.6E-06	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	1.7E-01	mg-hr-yr/m^3-day	9.5E-05	mg/m^3	5.9E-06	(µg/m^3)$^{-1}$	5.6E-07	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	6.1E+01	mg-hr-yr/m^3-day	3.5E-02	mg/m^3	2.0E-06	(µg/m^3)$^{-1}$	7.0E-05	N/A	N/A	N/A	N/A	N/A
				cis-1,2-Dichloroethene	4.8E+00	mg-hr-yr/m^3-day	2.7E-03	mg/m^3	N/A	(µg/m^3)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Nitrobenzene	4.3E-04	mg-hr-yr/m^3-day	2.4E-07	mg/m^3	4.0E-05	(µg/m^3)$^{-1}$	9.8E-09	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								7.5E-05					N/A
		Exposure Point Total									7.5E-05					N/A
		Indoor Air	Inhalation	1,1-Dichloroethane	1.1E-04	mg/m^3	4.7E-05	mg/m^3	1.6E-06	(ug/m3)$^{-1}$	7.5E-08	NA	NA	NA	NA	NA
				1,1-Dichloroethene	3.4E-03	mg/m^3	1.4E-03	mg/m^3	N/A	(ug/m3)$^{-1}$	N/A	NA	NA	NA	NA	NA
				Trichloroethene	4.1E-03	mg/m^3	1.7E-03	mg/m^3	2.0E-06	(ug/m3)$^{-1}$	3.4E-06	NA	NA	NA	NA	NA
				cis-1,2-Dichloroethene	2.6E-04	mg/m^3	1.1E-04	mg/m^3	N/A	(ug/m3)$^{-1}$	N/A	NA	NA	NA	NA	NA
			Exp. Route Total								3.5E-06					NA
		Exposure Point Total									3.5E-06					NA
	Exposure Medium Total										7.8E-05					N/A
Medium Total											4.4E-04					N/A
							Total of Receptor Risks Across All Media				4.4E-04	Total of Receptor Hazards Across All Medi				N/A

Notes-

N/A = Not applicable.

DAevent for exposure to groundwater while showering and bathing are calculated on Tables 7.2.RME Supplement A and 7.3.RME Supplement A.

Inhalation exposure while showering calculated on Tables 7.2.RME Supplement C and 7.3.RME Supplement B

TABLE 7.5.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Construction Worker
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	
Groundwater	Groundwater	Water in Excavation Pit	Dermal Absorption	1,1,2-Trichloroethane	1.6E+00	ug/L	3.7E-08	mg/kg/day	5.7E-02	1/mg/kg/day	2.1E-09	2.6E-06	mg/kg/day	4.0E-02	mg/kg/day	6.4E-05
				1,1-Dichloroethane	4.5E+01	ug/L	1.0E-06	mg/kg/day	5.7E-03	1/mg/kg/day	5.9E-09	7.3E-05	mg/kg/day	2.0E+00	mg/kg/day	3.6E-05
				1,1-Dichloroethene	2.9E+02	ug/L	1.1E-05	mg/kg/day	N/A		N/A	7.8E-04	mg/kg/day	5.0E-02	mg/kg/day	1.6E-02
				1,2-Dichloroethane	2.5E+00	ug/L	3.6E-08	mg/kg/day	9.1E-02	1/mg/kg/day	3.3E-09	2.5E-06	mg/kg/day	2.0E-02	mg/kg/day	1.3E-04
				Tetrachloroethene	4.2E+00	ug/L	5.0E-07	mg/kg/day	5.4E-01	1/mg/kg/day	2.7E-07	3.5E-05	mg/kg/day	1.0E-01	mg/kg/day	3.5E-04
				Trichloroethene	1.4E+03	ug/L	5.7E-05	mg/kg/day	5.9E-03	1/mg/kg/day	3.4E-07	4.0E-03	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	9.8E+01	ug/L	4.9E-06	mg/kg/day	N/A		N/A	3.4E-04	mg/kg/day	1.0E-01	mg/kg/day	3.4E-03
				Nitrobenzene	9.9E-02	ug/L	8.1E-09	mg/kg/day	N/A		N/A	5.7E-07	mg/kg/day	2.0E-03	mg/kg/day	2.8E-04
				RDX	1.8E+01	ug/L	3.0E-08	mg/kg/day	1.1E-01	1/mg/kg/day	3.3E-09	2.1E-06	mg/kg/day	3.0E-03	mg/kg/day	6.9E-04
				Aluminum	1.0E+04	ug/L	3.3E-05	mg/kg/day	N/A		N/A	2.3E-03	mg/kg/day	1.0E+00	mg/kg/day	2.3E-03
				Arsenic	2.1E+01	ug/L	6.7E-08	mg/kg/day	1.5E+00	1/mg/kg/day	1.0E-07	4.7E-06	mg/kg/day	3.0E-04	mg/kg/day	1.6E-02
				Cadmium	3.6E+00	ug/L	1.1E-08	mg/kg/day	N/A		N/A	8.0E-07	mg/kg/day	2.5E-05	mg/kg/day	3.2E-02
				Chromium	1.4E+02	ug/L	8.7E-07	mg/kg/day	5.0E-01	1/mg/kg/day	4.3E-07	6.1E-05	mg/kg/day	5.0E-04	mg/kg/day	1.2E-01
				Cobalt	5.6E+00	ug/L	1.8E-08	mg/kg/day	N/A		N/A	1.2E-06	mg/kg/day	3.0E-03	mg/kg/day	4.2E-04
				Iron	2.3E+04	ug/L	7.2E-05	mg/kg/day	N/A		N/A	5.0E-03	mg/kg/day	7.0E-01	mg/kg/day	7.2E-03
				Manganese	7.0E+01	ug/L	2.2E-07	mg/kg/day	N/A		N/A	1.6E-05	mg/kg/day	5.6E-03	mg/kg/day	2.8E-03
				Nickel	6.5E+01	ug/L	4.1E-08	mg/kg/day	N/A		N/A	2.9E-06	mg/kg/day	8.0E-04	mg/kg/day	3.6E-03
				Vanadium	4.9E+01	ug/L	1.6E-07	mg/kg/day	N/A		N/A	1.1E-05	mg/kg/day	1.8E-04	mg/kg/day	6.0E-02
			Exp. Route Total								1.2E-06					2.7E-01
		Exposure Point Total									1.2E-06					2.7E-01
	Exposure Medium Total										1.2E-06					2.7E-01
	Air	Volatilization from Water in Excavation Pit	Inhalation	1,1,2-Trichloroethane	1.6E+00	ug/L	9.9E-08	mg/m^3	1.6E-05	$(\mu g/m^3)^{-1}$	1.6E-09	6.9E-06	mg/m^3	N/A		N/A
				1,1-Dichloroethane	4.5E+01	ug/L	3.4E-06	mg/m^3	1.6E-06	$(\mu g/m^3)^{-1}$	5.4E-09	2.4E-04	mg/m^3	N/A		N/A
				1,1-Dichloroethene	2.9E+02	ug/L	2.2E-05	mg/m^3	N/A		N/A	1.5E-03	mg/m^3	2.0E-01	mg/m^3	7.7E-03
				1,2-Dichloroethane	2.5E+00	ug/L	1.8E-07	mg/m^3	2.6E-05	$(\mu g/m^3)^{-1}$	4.7E-09	1.3E-05	mg/m^3	2.4E+00	mg/m^3	5.2E-06
				Tetrachloroethene	4.2E+00	ug/L	2.5E-07	mg/m^3	5.9E-06	$(\mu g/m^3)^{-1}$	1.5E-09	1.7E-05	mg/m^3	2.7E-01	mg/m^3	6.4E-05
				Trichloroethene	1.4E+03	ug/L	9.2E-05	mg/m^3	2.0E-06	$(\mu g/m^3)^{-1}$	1.8E-07	6.4E-03	mg/m^3	N/A		N/A
				cis-1,2-Dichloroethene	9.8E+01	ug/L	7.5E-06	mg/m^3	N/A		N/A	5.2E-04	mg/m^3	N/A		N/A
				Nitrobenzene	9.9E-02	ug/L	2.0E-09	mg/m^3	4.0E-05	$(\mu g/m^3)^{-1}$	8.0E-11	1.4E-07	mg/m^3	1.8E-02	mg/m^3	8.0E-06
			Exp. Route Total								2.0E-07					7.7E-03
		Exposure Point Total									2.0E-07					7.7E-03
	Exposure Medium Total										2.0E-07					7.7E-03
Medium Total											1.4E-06					2.7E-01
									Total of Receptor Risks Across All Media		1.4E-06			Total of Receptor Hazards Across All Media		2.7E-01

TABLE 7.5.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Construction Worker
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	

Notes-

N/A = Not applicable.

DAevent for exposure to groundwater during excavation activities calculated on Table 7.5.RME Supplement A.

Inhalation concentration in excavation pit calculated on Table 7.5.RME Supplement B.

Table 7.5.RME Supplement A
Calculation of DAevent
Construction Worker
Site 34 14, NWS Yorktown

Chemical of Potential Concern	Water Concentration (CW) (μg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
1,1,2-Trichloroethane	1.6E+00	6.4E-03	2.9E-02	6.0E-01	1.4E+00	1.0E+00	8.0	9.2E-08	3
1,1-Dichloroethane	4.5E+01	6.7E-03	2.6E-02	3.8E-01	9.2E-01	1.0E+00	8.0	2.6E-06	3
1,1-Dichloroethene	2.9E+02	1.2E-02	4.4E-02	3.7E-01	8.9E-01	1.0E+00	8.0	2.8E-05	3
1,2-Dichloroethane	2.5E+00	4.2E-03	1.6E-02	3.8E-01	9.2E-01	1.0E+00	8.0	9.1E-08	3
Tetrachloroethene	4.2E+00	3.3E-02	1.7E-01	9.1E-01	2.2E+00	1.0E+00	8.0	1.3E-06	3
Trichloroethene	1.4E+03	1.2E-02	5.1E-02	5.8E-01	1.4E+00	1.0E+00	8.0	1.4E-04	3
cis-1,2-Dichloroethene[2]	9.8E+01	1.5E-02	5.6E-02	3.7E-01	8.8E-01	1.0E+00	8.0	1.2E-05	3
Nitrobenzene[2]	9.9E-02	2.3E-02	2.3E-02	5.1E-01	1.2E+00	1.0E+00	8.0	2.0E-08	3
RDX[2]	1.8E+01	3.5E-04	2.0E-03	1.8E+00	4.4E+00	1.0E+00	8.0	7.4E-08	3
Aluminum	1.0E+04	1.0E-03	NA	NA	NA	NA	8.0	8.2E-05	1
Arsenic	2.1E+01	1.0E-03	NA	NA	NA	NA	8.0	1.7E-07	1
Cadmium	3.6E+00	1.0E-03	NA	NA	NA	NA	8.0	2.9E-08	1
Chromium	1.4E+02	2.0E-03	NA	NA	NA	NA	8.0	2.2E-06	1
Iron	5.6E+00	1.0E-03	NA	NA	NA	NA	8.0	4.5E-08	1
Cobalt	2.3E+04	1.0E-03	NA	NA	NA	NA	8.0	1.8E-04	1
Manganese	7.0E+01	1.0E-03	NA	NA	NA	NA	8.0	5.6E-07	1
Nickel	6.5E+01	2.0E-04	NA	NA	NA	NA	8.0	1.0E-07	1
Vanadium	4.9E+01	1.0E-03	NA	NA	NA	NA	8.0	3.9E-07	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.2.RME Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.5.RME Supplement B
Calculation of Inhalation Concentration in Excavation Trench
Construction Worker
Site 34, NWS Yorktown

Exposure-point concentrations (inhalation) for construction/utility workers in a trench: Groundwater less than 15 feet deep	CAS No.	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Gas-Phase Mass Transfer Coefficient KiG cm/s	Liquid-Phase Mass Transfer Coefficient KiL cm/s	Overall Mass Transfer Coefficient Ki cm/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3	Concentration of Contaminant in Trench Ctrench mg/m3
Volatile Organic Compounds (VOCs)										
1,1,2-Trichloroethane	79-00-5	133.40	9.13E-04	4.26E-01	9.80E-04	9.23E-04	1.6E+00	3.8E-02	6.1E-02	6.1E-05
1,1-Dichloroethane	75-34-3	98.96	5.6E-03	4.7E-01	1.1E-03	1.1E-03	4.5E+01	4.6E-02	2.1E+00	2.1E-03
1,1-Dichloroethene	75-35-4	96.94	2.6E-02	4.7E-01	1.1E-03	1.1E-03	2.9E+02	4.7E-02	1.3E+01	1.3E-02
1,2-Dichloroethane	107-06-2	98.96	9.8E-04	4.7E-01	1.1E-03	1.1E-03	2.5E+00	4.4E-02	1.1E-01	1.1E-04
Tetrachloroethene	127-18-4	165.83	1.8E-02	4.0E-01	8.8E-04	8.8E-04	4.2E+00	3.6E-02	1.5E-01	1.5E-04
Trichloroethene	79-01-6	131.39	1.0E-02	4.3E-01	9.9E-04	9.8E-04	1.4E+03	4.0E-02	5.6E+01	5.6E-02
cis-1,2-Dichloroethene	156-59-2	96.94	4.1E-03	4.7E-01	1.1E-03	1.1E-03	9.8E+01	4.6E-02	4.6E+00	4.6E-03
Nitrobenzene	98-95-3	123.11	2.4E-05	4.4E-01	1.0E-03	3.0E-04	9.9E-02	1.2E-02	1.2E-03	1.2E-06

Equations

$$VF = (K_i \times A \times F \times 10^{-3} \times 10^{4} \times 3600) / (ACH \times V)$$

$$K_i = 1 / \{(1/k_{iL}) + [(R\ T) / (H_i\ k_{iG})]\}$$

$$k_{iL} = (MW_{O2}/MW_i)^{0.5} \times (T/298) \times k_{L,}O_2$$

$$k_{iG} = (MW_{H2O}/MW_i)^{0.335} \times (T/298)^{1.005} \times k_G,\ H_2O$$

Parameter Value

For Mass-Transfer Coefficients

Kg,H2O	0.833	cm/s
MWH2O	18	
Kg,O2	0.002	cm/s
MWO2	32	
T	**77**	F
T	298	K
R	8.20E-05	atm-m3/mol-K

For Emission Flux and Concentration in Trench

CF1	1.00E-03	L/cm3
CF2	1.00E+04	cm2/m2
CF3	3600	s/hr
F	**1**	
ACH	360	hr-1

Trench dimensions

Length	**10**	ft
	3.05	m
Width	**10**	ft
	3.05	m
Depth	**8**	ft
	2.44	m
Width/Depth	1.25	

TABLE 7.1.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Groundwater	Tap Water	Ingestion													
				1,1,2-Trichloroethane	1.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.9E-05	mg/kg/day	4.0E-03	mg/kg/day	4.6E-03
				1,1-Dichloroethane	4.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	5.5E-04	mg/kg/day	2.0E-01	mg/kg/day	2.7E-03
				1,1-Dichloroethene	1.3E+02	ug/L	N/A	N/A	N/A	N/A	N/A	1.6E-03	mg/kg/day	5.0E-02	mg/kg/day	3.3E-02
				1,2-Dichloroethane	2.3E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.9E-05	mg/kg/day	2.0E-02	mg/kg/day	1.5E-03
				Tetrachloroethene	3.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	5.0E-05	mg/kg/day	1.0E-02	mg/kg/day	5.0E-03
				Trichloroethene	4.9E+02	ug/L	N/A	N/A	N/A	N/A	N/A	6.2E-03	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	4.4E+01	ug/L	N/A	N/A	N/A	N/A	N/A	5.6E-04	mg/kg/day	1.0E-02	mg/kg/day	5.6E-02
				Nitrobenzene	8.3E-02	ug/L	N/A	N/A	N/A	N/A	N/A	1.1E-06	mg/kg/day	2.0E-03	mg/kg/day	5.3E-04
				RDX	7.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	9.1E-05	mg/kg/day	3.0E-03	mg/kg/day	3.0E-02
				Arsenic-dissolved	4.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	6.3E-05	mg/kg/day	3.0E-04	mg/kg/day	2.1E-01
				Chromium-dissolved	1.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.4E-05	mg/kg/day	3.0E-03	mg/kg/day	4.8E-03
			Exp. Route Total								N/A					3.5E-01
			Dermal Absorption													
				1,1,2-Trichloroethane	1.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.6E-06	mg/kg/day	4.0E-03	mg/kg/day	4.1E-04
				1,1-Dichloroethane	4.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	4.1E-05	mg/kg/day	2.0E-01	mg/kg/day	2.0E-04
				1,1-Dichloroethene	1.3E+02	ug/L	N/A	N/A	N/A	N/A	N/A	2.1E-04	mg/kg/day	5.0E-02	mg/kg/day	4.2E-03
				1,2-Dichloroethane	2.3E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.4E-06	mg/kg/day	2.0E-02	mg/kg/day	6.8E-05
				Tetrachloroethene	3.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.8E-05	mg/kg/day	1.0E-02	mg/kg/day	2.8E-03
				Trichloroethene	4.9E+02	ug/L	N/A	N/A	N/A	N/A	N/A	9.8E-04	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	4.4E+01	ug/L	N/A	N/A	N/A	N/A	N/A	9.0E-05	mg/kg/day	1.0E-02	mg/kg/day	9.0E-03
				Nitrobenzene	8.3E-02	ug/L	N/A	N/A	N/A	N/A	N/A	3.1E-07	mg/kg/day	2.0E-03	mg/kg/day	1.6E-04
				RDX	7.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.7E-07	mg/kg/day	3.0E-03	mg/kg/day	2.6E-04
				Arsenic-dissolved	4.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.0E-07	mg/kg/day	3.0E-04	mg/kg/day	6.7E-04
				Chromium-dissolved	1.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.6E-08	mg/kg/day	7.5E-05	mg/kg/day	6.1E-04
			Exp. Route Total								N/A					1.8E-02
		Exposure Point Total									N/A					3.7E-01
	Exposure Medium Total										N/A					3.7E-01

TABLE 7.1.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Air	Water Vapors at Showerhead	Inhalation													
				1,1,2-Trichloroethane	1.2E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.9E-04	mg/m^3	N/A		N/A
				1,1-Dichloroethane	4.9E-02	mg/m^3	N/A	N/A	N/A	N/A	N/A	7.8E-03	mg/m^3	N/A		N/A
				1,1-Dichloroethene	1.5E-01	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.4E-02	mg/m^3	2.0E-01	mg/m^3	1.2E-01
				1,2-Dichloroethane	2.3E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	3.7E-04	mg/m^3	2.4E+00	mg/m^3	1.5E-04
				Tetrachloroethene	3.6E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	5.8E-04	mg/m^3	2.7E-01	mg/m^3	2.1E-03
				Trichloroethene	4.9E-01	mg/m^3	N/A	N/A	N/A	N/A	N/A	7.9E-02	mg/m^3	N/A		N/A
				cis-1,2-Dichloroethene	5.0E-02	mg/m^3	N/A	N/A	N/A	N/A	N/A	8.0E-03	mg/m^3	N/A		N/A
				Nitrobenzene	8.3E-06	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.3E-06	mg/m^3	9.0E-03	mg/m^3	1.5E-04
			Exp. Route Total								N/A					1.2E-01
		Exposure Point Total									N/A					1.2E-01
		Indoor Air	Inhalation	1,1-Dichloroethane	1.1E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.7E-05	mg/m^3	N/A		N/A
				1,1-Dichloroethene	3.4E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	8.2E-04	mg/m^3	2.0E-01	mg/m^3	4.1E-03
				Trichloroethene	4.1E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	9.9E-04	mg/m^3	N/A		N/A
				cis-1,2-Dichloroethene	2.6E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	6.2E-05	mg/m^3	N/A		N/A
			Exp. Route Total								N/A					4.1E-03
		Exposure Point Total									N/A					4.1E-03
	Exposure Medium Total										N/A					1.2E-01
Medium Total											N/A					5.0E-01
									Total of Receptor Risks Across All Media		N/A	Total of Receptor Hazards Across All Media				5.0E-01

Notes-

N/A = Not applicable.

DAevent for exposure to groundwater while showering is calculated on Table 7.1.CTE Supplement A.

Table 7.1.CTE Supplement A
Calculation of DAevent
Resident Adult Ground Water
Site 34, NWS Yorktown

Chemical of Potential Concern	Water Concentration (CW) (µg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
1,1,2-Trichloroethane	1.5E+00	6.4E-03	2.9E-02	6.0E-01	1.4E+00	1.0E+00	0.25	9.9E-09	2
1,1-Dichloroethane	4.3E+01	6.7E-03	2.6E-02	3.8E-01	9.2E-01	1.0E+00	0.25	2.5E-07	2
1,1-Dichloroethene	1.3E+02	1.2E-02	4.4E-02	3.7E-01	8.9E-01	1.0E+00	0.25	1.3E-06	2
1,2-Dichloroethane	2.3E+00	4.2E-03	1.6E-02	3.8E-01	9.2E-01	1.0E+00	0.25	8.2E-09	2
Tetrachloroethene	3.9E+00	3.3E-02	1.7E-01	9.1E-01	2.2E+00	1.0E+00	0.25	1.7E-07	2
Trichloroethene	4.9E+02	1.2E-02	5.1E-02	5.8E-01	1.4E+00	1.0E+00	0.25	5.9E-06	2
cis-1,2-Dichloroethene[2]	4.4E+01	1.5E-02	5.6E-02	3.7E-01	8.8E-01	1.0E+00	0.25	5.5E-07	2
Nitrobenzene[2]	8.3E-02	2.3E-02	2.3E-02	5.1E-01	1.2E+00	1.0E+00	0.25	1.9E-09	2
RDX[2]	7.1E+00	3.5E-04	2.0E-03	1.8E+00	4.4E+00	1.0E+00	0.25	4.7E-09	2
Arsenic-dissolved	4.9E+00	1.0E-03	NA	NA	NA	NA	0.25	1.2E-09	1
Chromium-dissolved	1.1E+00	1.0E-03	NA	NA	NA	NA	0.25	2.8E-10	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.1.RME Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.1.CTE Supplement B

Inhalation Exposure Concentrations from Foster and Chrostowski Shower Model

Adult Resident

Site 34, NWS Yorktown

Chemical of Potential Concern	Exposure Point Concentration Cwo (µg/L)	Molecular weight (MW) (g/mole)	Henry's Law Constant (H) (atm-m^3/mole)	Kg (VOC) (cm/hr)	Kl (VOC) (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd (µg/L)	S (µg/m^3 -min)	Ca (mg/m^3)
1,1,2-Trichloroethane	1.5E+00	1.3E+02	8.2E-04	1.1E+03	1.1E+01	8.8E+00	1.2E+01	1.4E-01	1.1E-01	1.2E-03
1,1-Dichloroethane	4.3E+01	9.9E+01	5.6E-03	1.3E+03	1.3E+01	1.3E+01	1.7E+01	5.7E+00	4.8E+00	4.9E-02
1,1-Dichloroethene	1.3E+02	9.7E+01	2.6E-02	1.3E+03	1.3E+01	1.3E+01	1.8E+01	1.8E+01	1.5E+01	1.5E-01
1,2-Dichloroethane	2.3E+00	9.9E+01	1.2E-03	1.3E+03	1.3E+01	1.1E+01	1.5E+01	2.7E-01	2.2E-01	2.3E-03
Tetrachloroethene	3.9E+00	1.7E+02	1.8E-02	9.9E+02	1.0E+01	1.0E+01	1.4E+01	4.2E-01	3.5E-01	3.6E-03
Trichloroethene	4.9E+02	1.3E+02	9.9E-03	1.1E+03	1.2E+01	1.1E+01	1.5E+01	5.8E+01	4.8E+01	4.9E-01
cis-1,2-Dichloroethene	4.4E+01	9.7E+01	4.1E-03	1.3E+03	1.3E+01	1.3E+01	1.7E+01	5.8E+00	4.9E+00	5.0E-02
Nitrobenzene	8.3E-02	1.2E+02	2.4E-05	1.1E+03	1.2E+01	1.0E+00	1.4E+00	9.8E-04	8.1E-04	8.3E-06

Variables	Units	Exposure Assumptions
Kg(VOC) = gas-film mass transfer coefficient	cm/hr	Solved by Eq 1
Kl(VOC) = liquid-film mass transfer coefficient	cm/hr	Solved by Eq 2
KL = overall mass transfer coefficient	cm/hr	Solved by Eq 3
Kal = adjusted overall mass transfer coeff.	cm/hr	Solved by Eq 4
Tl = Calibration temp. of water	K (20C +273)	293
Ts = Shower water temperature	k (45C)	318
Us = water viscosity at Ts	centipoise	0.596
Ul = water viscosity at Tl	cp	1.002
Cwd = conc. leaving droplets after time sdt	µg/l	Solved by Eq 5
sdt = shower droplet drop time	sec	0.5
d = shower droplet diameter	mm	1
FR = shower water flow rate	l/min	10
SV = shower room air volume	m^3	12
S = indoor VOC generation rate	µg/m^3-min	Solved by Eq 6
Ds = duration of shower	min	15
Dt = total duration in shower room	min	30
R = air exchange rate	min^{-1}	0.0083
Ca = indoor air concentration of VOCs	µg/m^3	Solved by Eq 7

Equation 1:	Kg(VOC) =	3000 * (18 / MW)$^{0.5}$
Equation 2:	Kl(VOC) =	20 * (44 / MW)$^{0.5}$
Equation 3:	KL =	((1 / Kl(VOC)) + (0.024 / (Kg (VOC) * H)))$^{-1}$
Equation 4:	Kal =	(KL * (((Tl * Us) / (Ts * Ul))$^{-0.5}$))
Equation 5:	Cwd =	(Cwo * (1-EXP((-1 * Kal * sdt)/(60 * d))))
Equation 6:	S =	(Cwd * FR / SV)
Equation 7:	Ca =	If t>Ds [(S / R) * (Ds + (EXP(-R * Dt) / R) -(EXP(R *(Ds - Dt)) / R)] / Dt * 1/1000

TABLE 7.2.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Groundwater	Tap Water	Ingestion													
				1,1,2-Trichloroethane	1.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	6.2E-05	mg/kg/day	4.0E-03	mg/kg/day	1.5E-02
				1,1-Dichloroethane	4.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.8E-03	mg/kg/day	2.0E-01	mg/kg/day	9.2E-03
				1,1-Dichloroethene	1.3E+02	ug/L	N/A	N/A	N/A	N/A	N/A	5.5E-03	mg/kg/day	5.0E-02	mg/kg/day	1.1E-01
				1,2-Dichloroethane	2.3E+00	ug/L	N/A	N/A	N/A	N/A	N/A	9.8E-05	mg/kg/day	2.0E-02	mg/kg/day	4.9E-03
				Tetrachloroethene	3.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.7E-04	mg/kg/day	1.0E-02	mg/kg/day	1.7E-02
				Trichloroethene	4.9E+02	ug/L	N/A	N/A	N/A	N/A	N/A	2.1E-02	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	4.4E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.9E-03	mg/kg/day	1.0E-02	mg/kg/day	1.9E-01
				Nitrobenzene	8.3E-02	ug/L	N/A	N/A	N/A	N/A	N/A	3.6E-06	mg/kg/day	2.0E-03	mg/kg/day	1.8E-03
				RDX	7.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.0E-04	mg/kg/day	3.0E-03	mg/kg/day	1.0E-01
				Arsenic-dissolved	4.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.1E-04	mg/kg/day	3.0E-04	mg/kg/day	7.0E-01
				Chromium-dissolved	1.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.8E-05	mg/kg/day	3.0E-03	mg/kg/day	1.6E-02
			Exp. Route Total								N/A					1.2E+00
			Dermal Absorption													
				1,1,2-Trichloroethane	1.5E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.8E-06	mg/kg/day	4.0E-03	mg/kg/day	7.0E-04
				1,1-Dichloroethane	4.3E+01	ug/L	N/A	N/A	N/A	N/A	N/A	7.0E-05	mg/kg/day	2.0E-01	mg/kg/day	3.5E-04
				1,1-Dichloroethene	1.3E+02	ug/L	N/A	N/A	N/A	N/A	N/A	3.6E-04	mg/kg/day	5.0E-02	mg/kg/day	7.1E-03
				1,2-Dichloroethane	2.3E+00	ug/L	N/A	N/A	N/A	N/A	N/A	2.3E-06	mg/kg/day	2.0E-02	mg/kg/day	1.2E-04
				Tetrachloroethene	3.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	4.8E-05	mg/kg/day	1.0E-02	mg/kg/day	4.8E-03
				Trichloroethene	4.9E+02	ug/L	N/A	N/A	N/A	N/A	N/A	1.7E-03	mg/kg/day	N/A		N/A
				cis-1,2-Dichloroethene	4.4E+01	ug/L	N/A	N/A	N/A	N/A	N/A	1.5E-04	mg/kg/day	1.0E-02	mg/kg/day	1.5E-02
				Nitrobenzene	8.3E-02	ug/L	N/A	N/A	N/A	N/A	N/A	5.4E-07	mg/kg/day	2.0E-03	mg/kg/day	2.7E-04
				RDX	7.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	1.3E-06	mg/kg/day	3.0E-03	mg/kg/day	4.4E-04
				Arsenic-dissolved	4.9E+00	ug/L	N/A	N/A	N/A	N/A	N/A	3.5E-07	mg/kg/day	3.0E-04	mg/kg/day	1.2E-03
				Chromium-dissolved	1.1E+00	ug/L	N/A	N/A	N/A	N/A	N/A	7.8E-08	mg/kg/day	7.5E-05	mg/kg/day	1.0E-03
			Exp. Route Total								N/A					3.1E-02
		Exposure Point Total									N/A					1.2E+00
	Exposure Medium Total										N/A					1.2E+00

TABLE 7.2.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
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	
Groundwater	Air	Water Vapors at Showerhead	Inhalation													
				1,1,2-Trichloroethane	1.5E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.3E-05	mg/m3	N/A		N/A
				1,1-Dichloroethane	6.3E-02	mg/m^3	N/A	N/A	N/A	N/A	N/A	5.5E-04	mg/m3	N/A		N/A
				1,1-Dichloroethene	2.0E-01	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.7E-03	mg/m3	2.0E-01	mg/m^3	8.6E-03
				1,2-Dichloroethane	2.9E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.6E-05	mg/m3	2.4E+00	mg/m^3	1.1E-05
				Tetrachloroethene	4.6E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	4.1E-05	mg/m3	2.7E-01	mg/m^3	1.5E-04
				Trichloroethene	6.3E-01	mg/m^3	N/A	N/A	N/A	N/A	N/A	5.6E-03	mg/m3	N/A		N/A
				cis-1,2-Dichloroethene	6.4E-02	mg/m^3	N/A	N/A	N/A	N/A	N/A	5.6E-04	mg/m3	N/A		N/A
				Nitrobenzene	1.1E-05	mg/m^3	N/A	N/A	N/A	N/A	N/A	9.4E-08	mg/m3	9.0E-03	mg/m^3	1.0E-05
			Exp. Route Total								N/A					8.8E-03
		Exposure Point Total									N/A					8.8E-03
		Indoor Air	Inhalation	1,1-Dichloroethane	1.1E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	7.3E-05	mg/m^3	N/A		N/A
				1,1-Dichloroethene	3.4E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.2E-03	mg/m^3	2.0E-01	mg/m^3	1.1E-02
				Trichloroethene	4.1E-03	mg/m^3	N/A	N/A	N/A	N/A	N/A	2.6E-03	mg/m^3	N/A		N/A
				cis-1,2-Dichloroethene	2.6E-04	mg/m^3	N/A	N/A	N/A	N/A	N/A	1.7E-04	mg/m^3	N/A		N/A
			Exp. Route Total								N/A					1.1E-02
		Exposure Point Total									N/A					1.1E-02
	Exposure Medium Total										N/A					2.0E-02
Medium Total											N/A					1.2E+00
									Total of Receptor Risks Across All Media		N/A	Total of Receptor Hazards Across All Media				1.2E+00

Notes-
N/A = Not applicable.
DAevent for exposure to groundwater while bathing is calculated on Table 7.2.CTE Supplement A.

Table 7.2.CTE Supplement A
Calculation of DAevent
Resident Child Ground Water
Site 34, NWS Yorktown

Chemical of Potential Concern	Water Concentration (CW) (μg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
1,1,2-Trichloroethane	1.5E+00	6.4E-03	2.9E-02	6.0E-01	1.4E+00	1.0E+00	0.33	1.1E-08	2
1,1-Dichloroethane	4.3E+01	6.7E-03	2.6E-02	3.8E-01	9.2E-01	1.0E+00	0.33	2.8E-07	2
1,1-Dichloroethene	1.3E+02	1.2E-02	4.4E-02	3.7E-01	8.9E-01	1.0E+00	0.33	1.4E-06	2
1,2-Dichloroethane	2.3E+00	4.2E-03	1.6E-02	3.8E-01	9.2E-01	1.0E+00	0.33	9.5E-09	2
Tetrachloroethene	3.9E+00	3.3E-02	1.7E-01	9.1E-01	2.2E+00	1.0E+00	0.33	2.0E-07	2
Trichloroethene	4.9E+02	1.2E-02	5.1E-02	5.8E-01	1.4E+00	1.0E+00	0.33	6.8E-06	2
cis-1,2-Dichloroethene[2]	4.4E+01	1.5E-02	5.6E-02	3.7E-01	8.8E-01	1.0E+00	0.33	6.3E-07	2
Nitrobenzene	8.3E-02	2.3E-02	2.3E-02	5.1E-01	1.2E+00	1.0E+00	0.33	2.2E-09	2
RDX	7.1E+00	3.5E-04	2.0E-03	1.8E+00	4.4E+00	1.0E+00	0.33	5.3E-09	2
Arsenic-dissolved	4.9E+00	1.0E-03	NA	NA	NA	NA	0.33	1.6E-09	1
Chromium-dissolved	1.1E+00	1.0E-03	NA	NA	NA	NA	0.33	3.7E-10	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Organics: DAevent (mg/cm2-event) =
If t_{event} < t* then

$$DA_{event} = 2 \times FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \sqrt{\frac{6 \times \tau_{event} \times t_{event}}{\pi}} \qquad \text{(eq 2)}$$

If t_{event} > t* then

$$DA_{event} = FA \times K_p \times C_w \times 0.001 \quad mg/ug \times 0.001 \quad l/cm^3 \left[\frac{t_{event}}{1+B} + 2 \times \tau_{event} \left(\frac{1+3B+3B^2}{(1+B)^2} \right) \right] \qquad \text{(eq 3)}$$

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
[2] Lag time and B calculated on Table 7.1.RME Supplement B. Permeability constants from RAIS databases (http://rais.ornl.gov/cgi-bin/tox/TOX_select?select=csf).
N/A - not applicable.

Table 7.3.CTE Supplement B

Inhalation Exposure Concentrations from Foster and Chrostowski Shower Model

Child Resident

Site 34, NWS Yorktown

Chemical of Potential Concern	Exposure Point Concentration Cwo (µg/L)	Molecular weight (MW) (g/mole)	Henry's Law Constant (H) (atm-m^3/mole)	Kg (VOC) (cm/hr)	Kl (VOC) (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd (µg/L)	S (µg/m^3 -min)	Ca (mg/m^3)
1,1,2-Trichloroethane	1.5E+00	1.3E+02	8.2E-04	1.1E+03	1.1E+01	8.8E+00	1.2E+01	1.4E-01	1.1E-01	1.5E-03
1,1-Dichloroethane	4.3E+01	9.9E+01	5.6E-03	1.3E+03	1.3E+01	1.3E+01	1.7E+01	5.7E+00	4.8E+00	6.3E-02
1,1-Dichloroethene	1.3E+02	9.7E+01	2.6E-02	1.3E+03	1.3E+01	1.3E+01	1.8E+01	1.8E+01	1.5E+01	2.0E-01
1,2-Dichloroethane	2.3E+00	9.9E+01	1.2E-03	1.3E+03	1.3E+01	1.1E+01	1.5E+01	2.7E-01	2.2E-01	2.9E-03
Tetrachloroethene	3.9E+00	1.7E+02	1.8E-02	9.9E+02	1.0E+01	1.0E+01	1.4E+01	4.2E-01	3.5E-01	4.6E-03
Trichloroethene	4.9E+02	1.3E+02	9.9E-03	1.1E+03	1.2E+01	1.1E+01	1.5E+01	5.8E+01	4.8E+01	6.3E-01
cis-1,2-Dichloroethene	4.4E+01	9.7E+01	4.1E-03	1.3E+03	1.3E+01	1.3E+01	1.7E+01	5.8E+00	4.9E+00	6.4E-02
Nitrobenzene	8.3E-02	1.2E+02	2.4E-05	1.1E+03	1.2E+01	1.0E+00	1.4E+00	9.8E-04	8.1E-04	1.1E-05

Variables	Units	Exposure Assumptions
Kg(VOC) = gas-film mass transfer coefficient	cm/hr	Solved by Eq 1
Kl(VOC) = liquid-film mass transfer coefficient	cm/hr	Solved by Eq 2
KL = overall mass transfer coefficient	cm/hr	Solved by Eq 3
Kal = adjusted overall mass transfer coeff.	cm/hr	Solved by Eq 4
Tl = Calibration temp. of water	K (20C +273)	293
Ts = Shower water temperature	k (45C)	318
Us = water viscosity at Ts	centipoise	0.596
Ul = water viscosity at Tl	cp	1.002
Cwd = conc. leaving droplets after time sdt	µg/l	Solved by Eq 5
sdt = shower droplet drop time	sec	0.5
d = shower droplet diameter	mm	1
FR = shower water flow rate	l/min	10
SV = shower room air volume	m^3	12
S = indoor VOC generation rate	µg/m^3-min	Solved by Eq 6
Ds = duration of shower	min	19.8
Dt = total duration in shower room	min	40
R = air exchange rate	min^{-1}	0.0083
Ca = indoor air concentration of VOCs	µg/m^3	Solved by Eq 7

Equation 1:	Kg(VOC) =	$3000 * (18 / MW)^{0.5}$
Equation 2:	Kl(VOC) =	$20 * (44 / MW)^{0.5}$
Equation 3:	KL =	$((1 / Kl(VOC)) + (0.024 / (Kg (VOC) * H)))^{-1}$
Equation 4:	Kal =	$(KL * (((Tl * Us) / (Ts * Ul))^{-0.5}))$
Equation 5:	Cwd =	(Cwo * (1-EXP((-1 * Kal * sdt)/(60 * d))))
Equation 6:	S =	(Cwd * FR / SV)
Equation 7:	Ca =	If t>Ds [(S / R) * (Ds + (EXP(-R * Dt) / R) -(EXP(R *(Ds - Dt)) / R)] / Dt * 1/1000

TABLE 7.3.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	take/Exposure Concentratio		CSF/Unit Risk		Cancer Risk	take/Exposure Concentratio		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Groundwater	Tap Water	Ingestion													
				1,1,2-Trichloroethane	1.5E+00	ug/L	7.7E-06	mg/kg/day	5.7E-02	(mg/kg-day)$^{-1}$	4.4E-07	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethane	4.3E+01	ug/L	2.3E-04	mg/kg/day	5.7E-03	(mg/kg-day)$^{-1}$	1.3E-06	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethene	1.3E+02	ug/L	6.8E-04	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				1,2-Dichloroethane	2.3E+00	ug/L	1.2E-05	mg/kg/day	9.1E-02	(mg/kg-day)$^{-1}$	1.1E-06	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	3.9E+00	ug/L	2.1E-05	mg/kg/day	5.4E-01	(mg/kg-day)$^{-1}$	1.1E-05	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	4.9E+02	ug/L	2.6E-03	mg/kg/day	5.9E-03	(mg/kg-day)$^{-1}$	1.5E-05	N/A	N/A	N/A	N/A	N/A
				cis-1,2-Dichloroethene	4.4E+01	ug/L	2.3E-04	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				Nitrobenzene	8.3E-02	ug/L	4.4E-07	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				RDX	7.1E+00	ug/L	3.8E-05	mg/kg/day	1.1E-01	(mg/kg-day)$^{-1}$	4.2E-06	N/A	N/A	N/A	N/A	N/A
				Arsenic-dissolved	4.9E+00	ug/L	2.6E-05	mg/kg/day	1.5E+00	(mg/kg-day)$^{-1}$	3.9E-05	N/A	N/A	N/A	N/A	N/A
				Chromium-dissolved	1.1E+00	ug/L	5.9E-06	mg/kg/day	5.0E-01	(mg/kg-day)$^{-1}$	3.0E-06	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								7.5E-05					N/A
			Dermal Absorption													
				1,1,2-Trichloroethane	1.5E+00	ug/L	4.9E-07	mg/kg/day	5.7E-02	(mg/kg-day)$^{-1}$	2.8E-08	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethane	4.3E+01	ug/L	1.2E-05	mg/kg/day	5.7E-03	(mg/kg-day)$^{-1}$	6.9E-08	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethene	1.3E+02	ug/L	6.2E-05	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				1,2-Dichloroethane	2.3E+00	ug/L	4.0E-07	mg/kg/day	9.1E-02	(mg/kg-day)$^{-1}$	3.7E-08	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	3.9E+00	ug/L	8.4E-06	mg/kg/day	5.4E-01	(mg/kg-day)$^{-1}$	4.5E-06	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	4.9E+02	ug/L	2.9E-04	mg/kg/day	5.9E-03	(mg/kg-day)$^{-1}$	1.7E-06	N/A	N/A	N/A	N/A	N/A
				cis-1,2-Dichloroethene	4.4E+01	ug/L	2.7E-05	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				Nitrobenzene	8.3E-02	ug/L	9.3E-08	mg/kg/day	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				RDX	7.1E+00	ug/L	2.3E-07	mg/kg/day	1.1E-01	(mg/kg-day)$^{-1}$	2.5E-08	N/A	N/A	N/A	N/A	N/A
				Arsenic-dissolved	4.9E+00	ug/L	6.5E-08	mg/kg/day	1.5E+00	(mg/kg-day)$^{-1}$	9.8E-08	N/A	N/A	N/A	N/A	N/A
				Chromium-dissolved	1.1E+00	ug/L	1.5E-08	mg/kg/day	5.0E-01	(mg/kg-day)$^{-1}$	7.4E-09	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								6.5E-06					N/A
		Exposure Point Total									8.2E-05					N/A
	Exposure Medium Total										8.2E-05					N/A

TABLE 7.3.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	take/Exposure Concentratio		CSF/Unit Risk		Cancer Risk	take/Exposure Concentratio		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Groundwater	Air	Water Vapors at Showerhead	Inhalation	1,1,2-Trichloroethane	1.3E-02	mg-hr-yr/m^3-day	4.9E-06	mg/m^3	1.6E-05	(µg/m^3)$^{-1}$	7.8E-08	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethane	5.1E-01	mg-hr-yr/m^3-day	1.9E-04	mg/m^3	1.6E-06	(µg/m^3)$^{-1}$	3.1E-07	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethene	3.4E+00	mg-hr-yr/m^3-day	1.3E-03	mg/m^3	N/A	(µg/m^3)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				1,2-Dichloroethane	2.5E-02	mg-hr-yr/m^3-day	9.4E-06	mg/m^3	2.6E-05	(µg/m^3)$^{-1}$	2.4E-07	N/A	N/A	N/A	N/A	N/A
				Tetrachloroethene	3.8E-02	mg-hr-yr/m^3-day	1.5E-05	mg/m^3	5.9E-06	(µg/m^3)$^{-1}$	8.6E-08	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	1.4E+01	mg-hr-yr/m^3-day	5.4E-03	mg/m^3	2.0E-06	(µg/m^3)$^{-1}$	1.1E-05	N/A	N/A	N/A	N/A	N/A
				cis-1,2-Dichloroethene	1.1E+00	mg-hr-yr/m^3-day	4.2E-04	mg/m^3	N/A	(µg/m^3)$^{-1}$	N/A	N/A	N/A	N/A	N/A	N/A
				Nitrobenzene	9.9E-05	mg-hr-yr/m^3-day	3.8E-08	mg/m^3	4.0E-05	(µg/m^3)$^{-1}$	1.5E-09	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								1.2E-05					N/A
		Exposure Point Total									1.2E-05					N/A
		Indoor Air	Inhalation	1,1-Dichloroethane	1.1E-04	mg/m^3	1.6E-05	mg/m^3	1.6E-06	(ug/m3)$^{-1}$	2.5E-08	N/A	N/A	N/A	N/A	N/A
				1,1-Dichloroethene	3.4E-03	mg/m^3	4.7E-04	mg/m^3	N/A		N/A	N/A	N/A	N/A	N/A	N/A
				Trichloroethene	4.1E-03	mg/m^3	5.7E-04	mg/m^3	2.0E-06	(ug/m3)$^{-1}$	1.1E-06	N/A	N/A	N/A	N/A	N/A
				cis-1,2-Dichloroethene	2.6E-04	mg/m^3	3.6E-05	mg/m^3	N/A		N/A	N/A	N/A	N/A	N/A	N/A
			Exp. Route Total								1.2E-06					N/A
		Exposure Point Total									1.2E-06					N/A
	Exposure Medium Total										1.3E-05					N/A
Medium Total											9.5E-05					N/A
									Total of Receptor Risks Across All Media		9.5E-05	or Hazards Across All Media				N/A

Notes-

N/A = Not applicable.

DAevent for exposure to groundwater while showering and bathing are calculated on Tables 7.1.CTE Supplement A and 7.2.CTE Supplement A.

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Current/Future
Receptor Population: Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Air	Indoor Air	1,1-Dichloroethane	N/A	1.5E-09	N/A	1.5E-09	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	0.0E+00	Liver	N/A	3.9E-04	N/A	3.9E-04
			Trichloroethene	N/A	6.8E-08	N/A	6.8E-08	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	0.0E+00	N/A	N/A	N/A	N/A	0.0E+00
			Chemical Total	N/A	6.9E-08	N/A	6.9E-08		N/A	3.9E-04	N/A	3.9E-04
		Exposure Point Total					6.9E-08					3.9E-04
	Exposure Medium Total						6.9E-08					3.9E-04
Medium Total						Receptor Risk Total	6.9E-08					3.9E-04
Receptor Total						Receptor Risk Total	6.9E-08				Receptor HI Total	3.9E-04

Total Liver HI Across All Media = 3.9E-04

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	Blood	1.1E-02	N/A	1.0E-03	1.2E-02
			1,1-Dichloroethane	N/A	N/A	N/A	N/A	Kidney	6.2E-03	N/A	4.9E-04	6.7E-03
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	1.6E-01	N/A	2.1E-02	1.8E-01
			1,2-Dichloroethane	N/A	N/A	N/A	N/A	Kidney	3.4E-03	N/A	1.7E-04	3.6E-03
			Tetrachloroethene	N/A	N/A	N/A	N/A	Liver, Body Weight	1.2E-02	N/A	6.9E-03	1.8E-02
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	Blood	2.7E-01	N/A	4.6E-02	3.2E-01
			Nitrobenzene	N/A	N/A	N/A	N/A	Blood	1.4E-03	N/A	4.3E-04	1.8E-03
			RDX	N/A	N/A	N/A	N/A	Prostate	1.6E-01	N/A	1.4E-03	1.6E-01
			Arsenic-dissolved	N/A	N/A	N/A	N/A	Skin, Vascular	4.5E-01	N/A	2.3E-03	4.5E-01
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	1.4E-02	N/A	5.7E-03	1.9E-02
			Chemical Total	N/A	N/A	N/A	N/A		1.1E+00	0.0E+00	8.6E-02	1.1E+00
		Exposure Point Total					N/A					1.1E+00
	Exposure Medium Total						N/A					1.1E+00

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Air	Water Vapors at Showerhead	1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	N/A	7.2E-02	N/A	7.2E-02
			1,2-Dichloroethane	N/A	N/A	N/A	N/A	Blood, Kidney, Liver	N/A	4.4E-05	N/A	4.4E-05
			Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	6.1E-04	N/A	6.1E-04
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Nitrobenzene	N/A	N/A	N/A	N/A	Lung, Nose	N/A	4.7E-05	N/A	4.7E-05
			Chemical Total	N/A	N/A	N/A	N/A		0.0E+00	7.2E-02	0.0E+00	7.2E-02
		Exposure Point Total					N/A					7.2E-02
		Indoor Air	1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	N/A	5.6E-03	N/A	5.6E-03
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Chemical Total	N/A	N/A	N/A	N/A		N/A	5.6E-03	N/A	5.6E-03
		Exposure Point Total					N/A					5.6E-03
	Exposure Medium Total						N/A					7.8E-02
Medium Total							N/A					1.2E+00
Receptor Total							N/A				Receptor HI Total	1.2E+00

HI - Hazard Index
N/A - Not applicable

Total Blood HI Across All Media =	3.3E-01
Total Kidney HI Across All Media =	1.0E-02
Total Liver HI Across All Media =	2.7E-01
Total Body Weight HI Across All Media =	1.8E-02
Total Prostate HI Across All Media =	1.6E-01
Total Skin HI Across All Media =	4.5E-01
Total Vascular HI Across All Media =	4.5E-01
Total Neurological HI Across All Media =	6.1E-04
Total Lung HI Across All Media =	4.7E-05
Total Nose HI Across All Media =	4.7E-05

TABLE 9.3.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	Blood	2.6E-02	N/A	2.3E-03	2.8E-02
			1,1-Dichloroethane	N/A	N/A	N/A	N/A	Kidney	1.4E-02	N/A	1.1E-03	1.6E-02
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	3.7E-01	N/A	4.9E-02	4.1E-01
			1,2-Dichloroethane	N/A	N/A	N/A	N/A	Kidney	8.0E-03	N/A	3.9E-04	8.4E-03
			Tetrachloroethene	N/A	N/A	N/A	N/A	Liver, Body Weight	2.7E-02	N/A	1.6E-02	4.2E-02
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	Blood	6.3E-01	N/A	1.1E-01	7.4E-01
			Nitrobenzene	N/A	N/A	N/A	N/A	Blood	3.2E-03	N/A	9.6E-04	4.1E-03
			RDX	N/A	N/A	N/A	N/A	Prostate	3.8E-01	N/A	3.2E-03	3.8E-01
			Arsenic-dissolved	N/A	N/A	N/A	N/A	Skin, Vascular	1.0E+00	N/A	6.9E-03	1.1E+00
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	3.2E-02	N/A	1.7E-02	4.9E-02
			Chemical Total	N/A	N/A	N/A	N/A		2.5E+00	0.0E+00	2.0E-01	2.7E+00
		Exposure Point Total					N/A					2.7E+00
	Exposure Medium Total						N/A					2.7E+00

TABLE 9.3.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Air	Water Vapors at Showerhead	1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	N/A	2.0E-01	N/A	2.0E-01
			1,2-Dichloroethane	N/A	N/A	N/A	N/A	Blood, Kidney, Liver	N/A	1.2E-04	N/A	1.2E-04
			Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	1.7E-03	N/A	1.7E-03
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Nitrobenzene	N/A	N/A	N/A	N/A	Lung, Nose	N/A	1.3E-04	N/A	1.3E-04
			Chemical Total	N/A	N/A	N/A	N/A		0.0E+00	2.0E-01	0.0E+00	2.0E-01
		Exposure Point Total					N/A					2.0E-01
		Indoor Air	1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	N/A	1.6E-02	N/A	1.6E-02
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Chemical Total	N/A	N/A	N/A	N/A		N/A	1.6E-02	N/A	1.6E-02
		Exposure Point Total					N/A					1.6E-02
	Exposure Medium Total						N/A					2.2E-01
Medium Total							N/A					2.9E+00
Receptor Total							N/A				Receptor HI Total	2.9E+00

HI - Hazard Index

N/A - Not applicable

Total Blood HI Across All Media =	7.7E-01
Total Kidney HI Across All Media =	2.4E-02
Total Liver HI Across All Media =	6.7E-01
Total Body Weight HI Across All Media =	4.2E-02
Total Prostate HI Across All Media =	3.8E-01
Total Skin HI Across All Media =	1.1E+00
Total Vascular HI Across All Media =	1.1E+00
Total Neurological HI Across All Media =	1.7E-03
Total Lung HI Across All Media =	1.3E-04
Total Nose HI Across All Media =	1.3E-04

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1,2-Trichloroethane	1.4E-06	N/A	1.3E-07	1.5E-06	Blood	N/A	N/A	N/A	N/A
			1,1-Dichloroethane	3.8E-06	N/A	3.0E-07	4.1E-06	Kidney	N/A	N/A	N/A	N/A
			1,1-Dichloroethene	N/A	N/A	N/A	0.0E+00	Liver	N/A	N/A	N/A	N/A
			1,2-Dichloroethane	3.4E-06	N/A	1.7E-07	3.6E-06	Kidney	N/A	N/A	N/A	N/A
			Tetrachloroethene	3.4E-05	N/A	2.0E-05	5.4E-05	Liver, Body Weight	N/A	N/A	N/A	N/A
			Trichloroethene	1.2E-04	N/A	2.0E-05	1.4E-04	N/A	N/A	N/A	N/A	N/A
			cis-1,2-Dichloroethene	N/A	N/A	N/A	0.0E+00	Blood	N/A	N/A	N/A	N/A
			Nitrobenzene	N/A	N/A	N/A	0.0E+00	Blood	N/A	N/A	N/A	N/A
			RDX	2.9E-05	N/A	2.5E-07	2.9E-05	Prostate	N/A	N/A	N/A	N/A
			Arsenic-dissolved	1.1E-04	N/A	6.3E-07	1.1E-04	Skin, Vascular	N/A	N/A	N/A	N/A
			Chromium-dissolved	1.1E-05	N/A	1.3E-07	1.1E-05	Not identified	N/A	N/A	N/A	N/A
			Chemical Total	3.2E-04	0.0E+00	4.2E-05	3.6E-04		N/A	N/A	N/A	N/A
		Exposure Point Total					3.6E-04					N/A
	Exposure Medium Total						3.6E-04					N/A
	Air	Water Vapors at Showerhead										
			1,1,2-Trichloroethane	N/A	5.1E-07	N/A	5.1E-07	N/A	N/A	N/A	N/A	N/A
			1,1-Dichloroethane	N/A	2.0E-06	N/A	2.0E-06	N/A	N/A	N/A	N/A	N/A
			1,1-Dichloroethene	N/A	N/A	N/A	0.0E+00	Liver	N/A	N/A	N/A	N/A
			1,2-Dichloroethane	N/A	1.6E-06	N/A	1.6E-06	Blood, Kidney, Liver	N/A	N/A	N/A	N/A
			Tetrachloroethene	N/A	5.6E-07	N/A	5.6E-07	Neurological	N/A	N/A	N/A	N/A
			Trichloroethene	N/A	7.0E-05	N/A	7.0E-05	N/A	N/A	N/A	N/A	N/A
			cis-1,2-Dichloroethene	N/A	N/A	N/A	0.0E+00	N/A	N/A	N/A	N/A	N/A
			Nitrobenzene	N/A	9.8E-09	N/A	9.8E-09	Lung, Nose	N/A	N/A	N/A	N/A
			Chemical Total	0.0E+00	7.5E-05	0.0E+00	7.5E-05		N/A	N/A	N/A	N/A
		Exposure Point Total					7.5E-05					N/A

TABLE 9.4.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Air	Indoor Air	1,1-Dichloroethane	N/A	7.5E-08	N/A	7.5E-08	N/A	N/A	N/A	N/A	N/A
			1,1-Dichloroethene	N/A	N/A	N/A	0.0E+00	Liver	N/A	N/A	N/A	N/A
			Trichloroethene	N/A	3.4E-06	N/A	3.4E-06	N/A	N/A	N/A	N/A	N/A
			cis-1,2-Dichloroethene	N/A	N/A	N/A	0.0E+00	N/A	N/A	N/A	N/A	N/A
			Chemical Total	N/A	3.5E-06	N/A	3.5E-06		N/A	N/A	N/A	N/A
		Exposure Point Total					3.5E-06					N/A
	Exposure Medium Total						7.8E-05					N/A
Medium Total							4.4E-04					N/A
Receptor Total							4.4E-04				Receptor HI Total	N/A

HI - Hazard Index

N/A - Not applicable

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Water in Excavation Pit	1,1,2-Trichloroethane	N/A	N/A	2.1E-09	2.1E-09	Blood	N/A	N/A	6.4E-05	6.4E-05
			1,1-Dichloroethane	N/A	N/A	5.9E-09	5.9E-09	Kidney	N/A	N/A	3.6E-05	3.6E-05
			1,1-Dichloroethene	N/A	N/A	N/A	0.0E+00	Liver	N/A	N/A	1.6E-02	1.6E-02
			1,2-Dichloroethane	N/A	N/A	3.3E-09	3.3E-09	Kidney	N/A	N/A	1.3E-04	1.3E-04
			Tetrachloroethene	N/A	N/A	2.7E-07	2.7E-07	Liver	N/A	N/A	3.5E-04	3.5E-04
			Trichloroethene	N/A	N/A	3.4E-07	3.4E-07	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	0.0E+00	Blood	N/A	N/A	3.4E-03	3.4E-03
			Nitrobenzene	N/A	N/A	N/A	0.0E+00	Blood	N/A	N/A	2.8E-04	2.8E-04
			RDX	N/A	N/A	3.3E-09	3.3E-09	Prostate	N/A	N/A	6.9E-04	6.9E-04
			Aluminum	N/A	N/A	N/A	0.0E+00	Neurological	N/A	N/A	2.3E-03	2.3E-03
			Arsenic	N/A	N/A	1.0E-07	1.0E-07	Skin, Vascular	N/A	N/A	1.6E-02	1.6E-02
			Cadmium	N/A	N/A	N/A	0.0E+00	Kidney	N/A	N/A	3.2E-02	3.2E-02
			Chromium	N/A	N/A	4.3E-07	4.3E-07	Not identified	N/A	N/A	1.2E-01	1.2E-01
			Cobalt	N/A	N/A	N/A	0.0E+00	Thyroid	N/A	N/A	4.2E-04	4.2E-04
			Iron	N/A	N/A	N/A	0.0E+00	Gastrointestinal	N/A	N/A	7.2E-03	7.2E-03
			Manganese	N/A	N/A	N/A	0.0E+00	Central Nervous System	N/A	N/A	2.8E-03	2.8E-03
			Nickel	N/A	N/A	N/A	0.0E+00	Whole body	N/A	N/A	3.6E-03	3.6E-03
			Vanadium	N/A	N/A	N/A	0.0E+00	Lifetime	N/A	N/A	6.0E-02	6.0E-02
			Chemical Total	0.0E+00	0.0E+00	1.2E-06	1.2E-06		0.0E+00	0.0E+00	2.7E-01	2.7E-01
		Exposure Point Total					1.2E-06					2.7E-01
	Exposure Medium Total						1.2E-06					2.7E-01

TABLE 9.5.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Air	Volatilization from Water in Excavation Pit	1,1,2-Trichloroethane	N/A	1.6E-09	N/A	1.6E-09	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethane	N/A	5.4E-09	N/A	5.4E-09	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	0.0E+00	Liver	N/A	7.7E-03	N/A	7.7E-03
			1,2-Dichloroethane	N/A	4.7E-09	N/A	4.7E-09	Blood, Kidney, Liver	N/A	5.2E-06	N/A	5.2E-06
			Tetrachloroethene	N/A	1.5E-09	N/A	1.5E-09	Neurological	N/A	6.4E-05	N/A	6.4E-05
			Trichloroethene	N/A	1.8E-07	N/A	1.8E-07	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	0.0E+00	N/A	N/A	N/A	N/A	0.0E+00
			Nitrobenzene	N/A	8.0E-11	N/A	8.0E-11	Blood, Adrenal Gland, Kidney, Liver	N/A	8.0E-06	N/A	8.0E-06
			Chemical Total	0.0E+00	2.0E-07	0.0E+00	2.0E-07		0.0E+00	7.7E-03	0.0E+00	7.7E-03
		Exposure Point Total					2.0E-07					7.7E-03
	Exposure Medium Total						2.0E-07					7.7E-03
Medium Total							1.4E-06					2.7E-01
Receptor Total							1.4E-06				Receptor HI Total	2.7E-01

HI - Hazard Index
CNS = Central Nervous System
N/A - Not applicable

Total Blood HI Across All Media =	3.8E-03
Total Kidney HI Across All Media =	3.2E-02
Total Liver HI Across All Media =	2.4E-02
Total Whole Body HI Across All Media =	3.6E-03
Total Prostate HI Across All Media =	6.9E-04
Total Skin HI Across All Media =	1.6E-02
Total Vascular HI Across All Media =	1.6E-02
Total Neurological/Central Nervous System HI Across All Media =	5.1E-03
Total Gastrointestinal HI Across All Media =	7.2E-03
Total Lifetime HI Across All Media =	6.0E-02
Total Thyroid HI Across All Media =	4.2E-04
Total Adrenal Gland HI Across All Media =	8.0E-06

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	Blood	4.6E-03	N/A	4.1E-04	5.1E-03
			1,1-Dichloroethane	N/A	N/A	N/A	N/A	Kidney	2.7E-03	N/A	2.0E-04	2.9E-03
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	3.3E-02	N/A	4.2E-03	3.7E-02
			1,2-Dichloroethane	N/A	N/A	N/A	N/A	Kidney	1.5E-03	N/A	6.8E-05	1.5E-03
			Tetrachloroethene	N/A	N/A	N/A	N/A	Liver, Body Weight	5.0E-03	N/A	2.8E-03	7.8E-03
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	Blood	5.6E-02	N/A	9.0E-03	6.5E-02
			Nitrobenzene	N/A	N/A	N/A	N/A	Blood	5.3E-04	N/A	1.6E-04	6.9E-04
			RDX	N/A	N/A	N/A	N/A	Prostate	3.0E-02	N/A	2.6E-04	3.1E-02
			Arsenic-dissolved	N/A	N/A	N/A	N/A	Skin, Vascular	2.1E-01	N/A	6.7E-04	2.1E-01
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	4.8E-03	N/A	6.1E-04	5.4E-03
			Chemical Total	N/A	N/A	N/A	N/A		3.5E-01	0.0E+00	1.8E-02	3.7E-01
		Exposure Point Total					N/A					3.7E-01
	Exposure Medium Total						N/A					3.7E-01

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Air	Water Vapors at Showerhead	1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	N/A	1.2E-01	N/A	1.2E-01
			1,2-Dichloroethane	N/A	N/A	N/A	N/A	Blood, Kidney, Liver	N/A	1.5E-04	N/A	1.5E-04
			Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	2.1E-03	N/A	2.1E-03
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Nitrobenzene	N/A	N/A	N/A	N/A	Lung, Nose	N/A	1.5E-04	N/A	1.5E-04
			Chemical Total	N/A	N/A	N/A	N/A		0.0E+00	1.2E-01	0.0E+00	1.2E-01
		Exposure Point Total					N/A					1.2E-01
		Indoor Air	1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	N/A	4.1E-03	N/A	4.1E-03
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Chemical Total	N/A	N/A	N/A	N/A		N/A	4.1E-03	N/A	4.1E-03
		Exposure Point Total					N/A					4.1E-03
	Exposure Medium Total						N/A					1.3E-01
Medium Total							N/A					5.0E-01
Receptor Total							N/A				Receptor HI Total	5.0E-01

HI - Hazard Index
N/A - Not applicable

Total Blood HI Across All Media =	7.1E-02
Total Kidney HI Across All Media =	4.6E-03
Total Liver HI Across All Media =	1.7E-01
Total Body Weight HI Across All Media =	7.8E-03
Total Prostate HI Across All Media =	3.1E-02
Total Skin HI Across All Media =	2.1E-01
Total Vascular HI Across All Media =	2.1E-01
Total Neurological HI Across All Media =	2.1E-03
Total Lung HI Across All Media =	1.5E-04
Total Nose HI Across All Media =	1.5E-04

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	Blood	1.5E-02	N/A	7.0E-04	1.6E-02
			1,1-Dichloroethane	N/A	N/A	N/A	N/A	Kidney	9.2E-03	N/A	3.5E-04	9.5E-03
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	1.1E-01	N/A	7.1E-03	1.2E-01
			1,2-Dichloroethane	N/A	N/A	N/A	N/A	Kidney	4.9E-03	N/A	1.2E-04	5.0E-03
			Tetrachloroethene	N/A	N/A	N/A	N/A	Liver, Body Weight	1.7E-02	N/A	4.8E-03	2.2E-02
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	Blood	1.9E-01	N/A	1.5E-02	2.0E-01
			Nitrobenzene	N/A	N/A	N/A	N/A	Blood	1.8E-03	N/A	2.7E-04	2.0E-03
			RDX	N/A	N/A	N/A	N/A	Prostate	1.0E-01	N/A	4.4E-04	1.0E-01
			Arsenic-dissolved	N/A	N/A	N/A	N/A	Skin, Vascular	7.0E-01	N/A	1.2E-03	7.0E-01
			Chromium-dissolved	N/A	N/A	N/A	N/A	Not identified	1.6E-02	N/A	1.0E-03	1.7E-02
			Chemical Total	N/A	N/A	N/A	N/A		1.2E+00	0.0E+00	3.1E-02	1.2E+00
		Exposure Point Total					N/A					1.2E+00
	Exposure Medium Total						N/A					1.2E+00

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Air	Water Vapors at Showerhead	1,1,2-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	N/A	8.6E-03	N/A	8.6E-03
			1,2-Dichloroethane	N/A	N/A	N/A	N/A	Blood, Kidney, Liver	N/A	1.1E-05	N/A	1.1E-05
			Tetrachloroethene	N/A	N/A	N/A	N/A	Neurological	N/A	1.5E-04	N/A	1.5E-04
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Nitrobenzene	N/A	N/A	N/A	N/A	Lung, Nose	N/A	1.0E-05	N/A	1.0E-05
			Chemical Total	N/A	N/A	N/A	N/A		0.0E+00	8.8E-03	0.0E+00	8.8E-03
		Exposure Point Total					N/A					8.8E-03
		Indoor Air	1,1-Dichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	N/A	1.1E-02	N/A	1.1E-02
			Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0E+00
			Chemical Total	N/A	N/A	N/A	N/A		N/A	1.1E-02	N/A	1.1E-02
		Exposure Point Total					N/A					1.1E-02
	Exposure Medium Total						N/A					2.0E-02
Medium Total							N/A					1.2E+00
Receptor Total							N/A				Receptor HI Total	1.2E+00

HI - Hazard Index
N/A - Not applicable

Total Blood HI Across All Media =	2.2E-01
Total Kidney HI Across All Media =	1.5E-02
Total Liver HI Across All Media =	1.6E-01
Total Body Weight HI Across All Media =	2.2E-02
Total Prostate HI Across All Media =	1.0E-01
Total Skin HI Across All Media =	7.0E-01
Total Vascular HI Across All Media =	7.0E-01
Total Neurological HI Across All Media =	1.5E-04
Total Lung HI Across All Media =	1.0E-05
Total Nose HI Across All Media =	1.0E-05

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1,2-Trichloroethane	4.4E-07	N/A	2.8E-08	4.7E-07	Blood	N/A	N/A	N/A	N/A
			1,1-Dichloroethane	1.3E-06	N/A	6.9E-08	1.4E-06	Kidney	N/A	N/A	N/A	N/A
			1,1-Dichloroethene	N/A	N/A	N/A	0.0E+00	Liver	N/A	N/A	N/A	N/A
			1,2-Dichloroethane	1.1E-06	N/A	3.7E-08	1.1E-06	Kidney	N/A	N/A	N/A	N/A
			Tetrachloroethene	1.1E-05	N/A	4.5E-06	1.6E-05	Liver, Body Weight	N/A	N/A	N/A	N/A
			Trichloroethene	1.5E-05	N/A	1.7E-06	1.7E-05	N/A	N/A	N/A	N/A	N/A
			cis-1,2-Dichloroethene	N/A	N/A	N/A	0.0E+00	Blood	N/A	N/A	N/A	N/A
			Nitrobenzene	N/A	N/A	N/A	0.0E+00	Blood	N/A	N/A	N/A	N/A
			RDX	4.2E-06	N/A	2.5E-08	4.2E-06	Prostate	N/A	N/A	N/A	N/A
			Arsenic-dissolved	3.9E-05	N/A	9.8E-08	3.9E-05	Skin, Vascular	N/A	N/A	N/A	N/A
			Chromium-dissolved	3.0E-06	N/A	7.4E-09	3.0E-06	Not identified	N/A	N/A	N/A	N/A
			Chemical Total	7.5E-05	0.0E+00	6.5E-06	8.2E-05		N/A	N/A	N/A	N/A
		Exposure Point Total					8.2E-05					N/A
	Exposure Medium Total						8.2E-05					N/A
	Air	Water Vapors at Showerhead										
			1,1,2-Trichloroethane	N/A	7.8E-08	N/A	7.8E-08	N/A	N/A	N/A	N/A	N/A
			1,1-Dichloroethane	N/A	3.1E-07	N/A	3.1E-07	N/A	N/A	N/A	N/A	N/A
			1,1-Dichloroethene	N/A	N/A	N/A	0.0E+00	Liver	N/A	N/A	N/A	N/A
			1,2-Dichloroethane	N/A	2.4E-07	N/A	2.4E-07	Blood, Kidney, Liver	N/A	N/A	N/A	N/A
			Tetrachloroethene	N/A	8.6E-08	N/A	8.6E-08	Neurological	N/A	N/A	N/A	N/A
			Trichloroethene	N/A	1.1E-05	N/A	1.1E-05	N/A	N/A	N/A	N/A	N/A
			cis-1,2-Dichloroethene	N/A	N/A	N/A	0.0E+00	N/A	N/A	N/A	N/A	N/A
			Nitrobenzene	N/A	1.5E-09	N/A	1.5E-09	Lung, Nose	N/A	N/A	N/A	N/A
			Chemical Total	0.0E+00	1.2E-05	0.0E+00	1.2E-05		N/A	N/A	N/A	N/A
		Exposure Point Total					1.2E-05					N/A

TABLE 9.3.CTE

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Air	Indoor Air	1,1-Dichloroethane	N/A	2.5E-08	N/A	2.5E-08	N/A	N/A	N/A	N/A	N/A
			1,1-Dichloroethene	N/A	N/A	N/A	0.0E+00	Liver	N/A	N/A	N/A	N/A
			Trichloroethene	N/A	1.1E-06	N/A	1.1E-06	N/A	N/A	N/A	N/A	N/A
			cis-1,2-Dichloroethene	N/A	N/A	N/A	0.0E+00	N/A	N/A	N/A	N/A	N/A
			Chemical Total	N/A	1.2E-06	N/A	1.2E-06		N/A	N/A	N/A	N/A
		Exposure Point Total					1.2E-06					N/A
	Exposure Medium Total						1.3E-05					N/A
Medium Total							9.5E-05					N/A
Receptor Total							9.5E-05				Receptor HI Total	N/A

HI - Hazard Index

N/A - Not applicable

TABLE 10.1.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	1.6E-01	N/A	2.1E-02	1.8E-01
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	Blood	2.7E-01	N/A	4.6E-02	3.2E-01
			RDX	N/A	N/A	N/A	N/A	Prostate	1.6E-01	N/A	1.4E-03	1.6E-01
			Arsenic-dissolved	N/A	N/A	N/A	N/A	Skin, Vascular	4.5E-01	N/A	2.3E-03	4.5E-01
			Chemical Total	N/A	N/A	N/A	N/A		1.0E+00	0.0E+00	7.1E-02	1.1E+00
		Exposure Point Total					N/A					1.1E+00
	Exposure Medium Total						N/A					1.1E+00
Medium Total							N/A					1.1E+00
Receptor Total							N/A				Receptor HI Total	1.1E+00

HI - Hazard Index
N/A - Not applicable

Total Blood HI Across All Media =	3.2E-01
Total Liver HI Across All Media =	1.8E-01
Total Prostate HI Across All Media =	1.6E-01
Total Skin HI Across All Media =	4.5E-01
Total Vascular HI Across All Media =	4.5E-01

TABLE 10.2.RME

RISK SUMMARY

REASONABLE MAXIMUM EXPOSURE

Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	3.7E-01	N/A	4.9E-02	4.1E-01
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	Blood	6.3E-01	N/A	1.1E-01	7.4E-01
			RDX	N/A	N/A	N/A	N/A	Prostate	3.8E-01	N/A	3.2E-03	3.8E-01
			Arsenic-dissolved	N/A	N/A	N/A	N/A	Skin, Vascular	1.0E+00	N/A	6.9E-03	1.1E+00
			Chemical Total	N/A	N/A	N/A	N/A		2.4E+00	0.0E+00	1.7E-01	2.6E+00
		Exposure Point Total					N/A					2.6E+00
	Exposure Medium Total						N/A					2.6E+00

TABLE 10.2.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Air	Water Vapors at Showerhead	1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	N/A	2.0E-01	N/A	2.0E-01
			Chemical Total	N/A	N/A	N/A	N/A		0.0E+00	2.0E-01	0.0E+00	2.0E-01
		Exposure Point Total					N/A					2.0E-01
	Exposure Medium Total						N/A					2.0E-01
Medium Total							N/A					2.8E+00
Receptor Total							N/A				Receptor HI Total	2.8E+00

HI - Hazard Index
N/A - Not applicable

Total Blood HI Across All Media =	7.4E-01
Total Liver HI Across All Media =	6.1E-01
Total Prostate HI Across All Media =	3.8E-01
Total Skin HI Across All Media =	1.1E+00
Total Vascular HI Across All Media =	1.1E+00

TABLE 10.3.RME
RISK SUMMARY
REASONABLE MAXIMUM EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1,2-Trichloroethane	1.4E-06	N/A	1.3E-07	1.5E-06	Blood	N/A	N/A	N/A	N/A
			1,1-Dichloroethane	3.8E-06	N/A	3.0E-07	4.1E-06	Kidney	N/A	N/A	N/A	N/A
			1,2-Dichloroethane	3.4E-06	N/A	1.7E-07	3.6E-06	Kidney	N/A	N/A	N/A	N/A
			Tetrachloroethene	3.4E-05	N/A	2.0E-05	5.4E-05	Liver, Body Weight	N/A	N/A	N/A	N/A
			Trichloroethene	1.2E-04	N/A	2.0E-05	1.4E-04	N/A	N/A	N/A	N/A	N/A
			RDX	2.9E-05	N/A	2.5E-07	2.9E-05	Prostate	N/A	N/A	N/A	N/A
			Arsenic-dissolved	1.1E-04	N/A	6.3E-07	1.1E-04	Skin, Vascular	N/A	N/A	N/A	N/A
			Chromium-dissolved	1.1E-05	N/A	1.3E-07	1.1E-05	Not identified	N/A	N/A	N/A	N/A
			Chemical Total	3.2E-04	0.0E+00	4.2E-05	3.6E-04		N/A	N/A	N/A	N/A
		Exposure Point Total					3.6E-04					N/A
	Exposure Medium Total						3.6E-04					N/A
	Air	Water Vapors at Showerhead										
			1,1-Dichloroethane	N/A	2.0E-06	N/A	2.0E-06	N/A	N/A	N/A	N/A	N/A
			1,2-Dichloroethane	N/A	1.6E-06	N/A	1.6E-06	Blood, Kidney, Liver	N/A	N/A	N/A	N/A
			Trichloroethene	N/A	7.0E-05	N/A	7.0E-05	N/A	N/A	N/A	N/A	N/A
			Chemical Total	0.0E+00	7.4E-05	0.0E+00	7.4E-05		N/A	N/A	N/A	N/A
		Exposure Point Total					7.4E-05					N/A
Groundwater	Air	Indoor Air										
			1,1-Dichloroethane	N/A	7.5E-08	N/A	7.5E-08	N/A	N/A	N/A	N/A	N/A
			Trichloroethene	N/A	3.4E-06	N/A	3.4E-06	N/A	N/A	N/A	N/A	N/A
			Chemical Total	N/A	3.5E-06	N/A	3.5E-06		N/A	N/A	N/A	N/A
		Exposure Point Total					3.5E-06					N/A
	Exposure Medium Total						7.7E-05					N/A
Medium Total							4.3E-04					N/A
Receptor Total							4.3E-04				Receptor HI Total	N/A

HI - Hazard Index
N/A - Not applicable

TABLE 10.1.CTE
RISK SUMMARY
CENTRAL TENDENCY EXPOSURE
Site 34, NWS Yorktown

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water										
			1,1-Dichloroethene	N/A	N/A	N/A	N/A	Liver	1.1E-01	N/A	7.1E-03	1.2E-01
			cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	Blood	1.9E-01	N/A	1.5E-02	2.0E-01
			RDX	N/A	N/A	N/A	N/A	Prostate	1.0E-01	N/A	4.4E-04	1.0E-01
			Arsenic-dissolved	N/A	N/A	N/A	N/A	Skin, Vascular	7.0E-01	N/A	1.2E-03	7.0E-01
			Chemical Total	N/A	N/A	N/A	N/A		1.1E+00	0.0E+00	2.4E-02	1.1E+00
		Exposure Point Total					N/A					1.1E+00
	Exposure Medium Total						N/A					1.1E+00
Medium Total							N/A					1.1E+00
Receptor Total							N/A				Receptor HI Total	1.1E+00

HI - Hazard Index
N/A - Not applicable

Total Blood HI Across All Media =	2.0E-01
Total Liver HI Across All Media =	1.2E-01
Total Prostate HI Across All Media =	1.0E-01
Total Skin HI Across All Media =	7.0E-01
Total Vascular HI Across All Media =	7.0E-01

Table 11.1

The J-E Model Input Parameter Values Used for Modeling, Including Uncertainty Evaluation Input Parameters

SSA 14, NWS Yorktown, Yorktown, VA

Parameter	Units	Relative Model Sensitivity to Input Parameter	Practical Range	EPA's Default Values	Model Value	Relative Uncertainty	Source
Groundwater concentration	ug/L	High	User-defined	NA	User-defined	Low	Yorktown Database
Average groundwater temperature	C		User-defined	NA	17.7	Low	November 2007 Sampling Event
Depth below grade to bottom of enclosed floor space	cm	High	User-defined	15 (slab-on-grade)	15	Moderate	J-E Model documentation
Depth below grade to water table	cm	High	User-defined	NA	247*	Low	Monitoring Well YSA14-GW02
SCS soil types	--	Moderate/High	User-defined	NA	Silty Clay	Moderate	monitoring well boring logs
Soil vapor permeability	cm^2	High	10E-6 to 10E-12	10E-8	Esimated base on soil type	High	J-E Model documentation
Soil dry bulk density	g/cm^3	Low	1.25 - 1.75	1.38	1.38	Low	J-E Model documentation
Soil total porosity	--	Moderate	0.34 - 0.53	0.481	0.481	Low	J-E Model documentation
Soil-water filled porosity	cm^3/cm^3	High	0.04 - 0.33	0.216	0.216	High	J-E Model documentation
Enclosed space floor thickness	cm	Low	User-defined	10	10	High	10 cm used as a conservative value
Soil-building pressure differential	$g\text{-}cm\text{-}s^2$	High	0 – 200	40	40	High	J-E Model documentation (Now used in model to calculate Qsoil)
Building: Enclosed Floor Space Length x Width x Height (Industrial Scenario)	cm	Moderate	User-defined	1000 x 1000 x 244	15 x 15 x 15	Low	Approximate dimensions of bunkers
Building: Enclosed Floor Space Length x Width x Height (Residential Scenario)	cm	Moderate	User-defined	1000 x 1000 x 244	1000 x 1000 x 244	Low	J-E Model documentation
Floor-wall seam crack width	cm	Moderate	0.05 - 1.0	0.1	0.1	High	J-E Model documentation
Indoor air exchange rate (Industrial Scenario)	1/h	Moderate	0.18 - 1.26	0.25	0.34	Moderate	Calculated using NJDEP, 2007 methodology
Indoor air exchange rate (Residential Scenario)	1/h	Moderate	0.18 - 1.26	0.25	0.25	Moderate	J-E Model documentation

Notes:

C = Degrees Celsius cm = Centimeter

cm^2 = Square centimeter g/cm^3 = Grams per cubic centimeter cm^3/cm^3 = Cubic centimeter times cubic centimeter

$g\text{-}cm\text{-}s^2$ = Grams minus centimeters minus seconds squared m^3 = Cubic meters 1/h = One per hour

NA = Not applicable J-E = Johnson-Ettinger Model SCS = U.S. Soil Conservation Service

* For conservancy the shallowest depth to groundwater from the most recent groundwater sampling event was used.

Table 11.1
The J-E Model Input Parameter Values Used for Modeling
SSA 14, NWS Yorktown, Yorktown, VA

Model Input Example for the Industrial Scenario:

Average soil/ groundwater temperature, T_S (^oC)	Depth below grade to bottom of enclosed space floor, L_F (cm)	Depth below grade to water table, L_{WT} (cm)	Totals must add up to value of L_{WT} (cell G28): Thickness of soil stratum A, h_A (cm)	Thickness of soil stratum B, :nter value or h_B (cm)	Thickness of soil stratum C, (Enter value or 0) h_C (cm)	Soil stratum directly above water table, (Enter A, B, or C)	SCS soil type directly above water table	Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	User-defined stratum A soil vapor permeability, k_v (cm^2)
17.7	15	247	247	0	0	A	SIC	SIC		

Stratum A SCS soil type	Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	Stratum A soil total porosity, n^A (unitless)	Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	Stratum B SCS soil type	Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	Stratum B soil total porosity, n^B (unitless)	Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	Stratum C SCS soil type	Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	Stratum C soil total porosity, n^C (unitless)	Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
SIC	1.38	0.481	0.216								

Enclosed space floor thickness, L_{crack} (cm)	Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	Enclosed space floor length, L_B (cm)	Enclosed space floor width, W_B (cm)	Enclosed space height, H_B (cm)	Floor-wall seam crack width, w (cm)	Indoor air exchange rate, ER (1/h)		Average vapor flow rate into bldg. OR Leave blank to calculate Qsoil (L/m)
10	40	457	457	457	0.1	0.34		2.29

Model Input Example for the Residential Scenario:

Average soil/ groundwater temperature, T_S (^oC)	Depth below grade to bottom of enclosed space floor, L_F (cm)	Depth below grade to water table, L_{WT} (cm)	Totals must add up to value of L_{WT} (cell G28): Thickness of soil stratum A, h_A (cm)	Thickness of soil stratum B, :nter value or h_B (cm)	Thickness of soil stratum C, (Enter value or 0) h_C (cm)	Soil stratum directly above water table, (Enter A, B, or C)	SCS soil type directly above water table	Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	User-defined stratum A soil vapor permeability, k_v (cm^2)
17.7	15	247	247	0	0	A	SIC	SIC		

Stratum A SCS soil type	Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	Stratum A soil total porosity, n^A (unitless)	Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	Stratum B SCS soil type	Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	Stratum B soil total porosity, n^B (unitless)	Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	Stratum C SCS soil type	Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	Stratum C soil total porosity, n^C (unitless)	Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
SIC	1.38	0.481	0.216								

Enclosed space floor thickness, L_{crack} (cm)	Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	Enclosed space floor length, L_B (cm)	Enclosed space floor width, W_B (cm)	Enclosed space height, H_B (cm)	Floor-wall seam crack width, w (cm)	Indoor air exchange rate, ER (1/h)		Average vapor flow rate into bldg. OR Leave blank to calculate Qsoil (L/m)
15	40	1000	1000	244	0.1	0.25		5

Table 11.2
Johnson and Ettinger Groundwater Version 3.1 Advanced Model - Output Values for Industrial Scenario
SSA 14, NWS Yorktown, Yorktown, VA

CASRN	Chemical	Groundwater Concentration (ug/L)	Diffusivity in air, Da (cm2/s)	Diffusivity in water, Dw (cm2/s)	Henry's law constant at reference temperature, H (atm-m3/mol)	Henry's law constant reference temperature, TR (oC)	Enthalpy of vaporization at the normal boiling point, DHv,b (cal/mol)	Normal boiling point, TB (oK)	Critical temperature, TC (oK)	Organic carbon partition coefficient, Koc (cm3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF (mg/m3)-1	Reference conc., RfC (mg/m3)
Indoor Worker (Industrial Worker) Scenario													
75-34-3	1,1-Dichloroethane	47	8.4E-02	1.1E-05	5.6E-03	2.4E+01	6.9E+03	3.3E+02	5.2E+02	3.2E+01	5.0E+03	1.6E-06	0.0E+00
75-35-4	1,1-Dichlorethene	400	8.6E-02	1.1E-05	2.6E-02	2.4E+01	6.2E+03	3.0E+02	5.8E+02	3.2E+01	2.4E+03	0.0E+00	2.0E-01
156-59-2	cis-1,2-Dichloroethylene	130	8.8E-02	1.1E-05	4.1E-03	2.5E+01	7.2E+03	3.3E+02	5.4E+02	4.0E+01	6.4E+03	0.0E+00	0.0E+00
79-01-6	Trichloroethene	1400	6.9E-02	1.0E-05	9.9E-03	2.4E+01	7.5E+03	3.6E+02	5.4E+02	6.1E+01	1.3E+03	2.0E-06	0.0E+00

CASRN	Chemical	Exposure duration, t (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
Indoor Worker (Industrial Worker) Scenario															
75-34-3	1,1-Dichloroethane	7.9E+08	2.3E+02	2.7E-01	ERROR	ERROR	2.8E-01	1.5E-09	8.4E-01	1.3E-09	1.9E+02	4.8E-01	5.7E-02	4.2E-01	1.8E+03
75-35-4	1,1-Dichlorethene	7.9E+08	2.3E+02	2.7E-01	ERROR	ERROR	2.8E-01	1.5E-09	8.4E-01	1.3E-09	1.9E+02	4.8E-01	5.7E-02	4.2E-01	1.8E+03
156-59-2	cis-1,2-Dichloroethylene	7.9E+08	2.3E+02	2.7E-01	ERROR	ERROR	2.8E-01	1.5E-09	8.4E-01	1.3E-09	1.9E+02	4.8E-01	5.7E-02	4.2E-01	1.8E+03
79-01-6	Trichloroethene	7.9E+08	2.3E+02	2.7E-01	ERROR	ERROR	2.8E-01	1.5E-09	8.4E-01	1.3E-09	1.9E+02	4.8E-01	5.7E-02	4.2E-01	1.8E+03

CASRN	Chemical	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. groundwater temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
Indoor Worker (Industrial Worker) Scenario															
75-34-3	1,1-Dichloroethane	9.0E+03	2.4E+05	7.7E-04	1.5E+01	7.4E+03	4.3E-03	1.8E-01	1.8E-04	4.4E-03	0.0E+00	0.0E+00	4.2E-05	5.0E-05	2.3E+02
75-35-4	1,1-Dichlorethene	9.0E+03	2.4E+05	7.7E-04	1.5E+01	6.3E+03	2.1E-02	8.7E-01	1.8E-04	4.5E-03	0.0E+00	0.0E+00	3.0E-05	3.7E-05	2.3E+02
156-59-2	cis-1,2-Dichloroethylene	9.0E+03	2.4E+05	7.7E-04	1.5E+01	7.7E+03	2.9E-03	1.2E-01	1.8E-04	4.6E-03	0.0E+00	0.0E+00	5.0E-05	6.0E-05	2.3E+02
79-01-6	Trichloroethene	9.0E+03	2.4E+05	7.7E-04	1.5E+01	8.5E+03	7.2E-03	3.0E-01	1.8E-04	3.6E-03	0.0E+00	0.0E+00	3.0E-05	3.6E-05	2.3E+02

CASRN	Chemical	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	**Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)**
Indoor Worker (Industrial Worker) Scenario										
75-34-3	1,1-Dichloroethane	1.5E+01	8.4E+03	1.0E-01	3.8E+01	4.4E-03	1.8E+02	3.8E+207	5.7E-06	**4.8E-02**
75-35-4	1,1-Dichlorethene	1.5E+01	3.5E+05	1.0E-01	3.8E+01	4.5E-03	1.8E+02	6.4E+202	4.1E-06	**1.4E+00**
156-59-2	cis-1,2-Dichloroethylene	1.5E+01	1.6E+04	1.0E-01	3.8E+01	4.6E-03	1.8E+02	1.3E+198	6.8E-06	**1.1E-01**
79-01-6	Trichloroethene	1.5E+01	4.2E+05	1.0E-01	3.8E+01	3.6E-03	1.8E+02	5.4E+252	4.1E-06	**1.7E+00**

Table 11.3

Johnson and Ettinger Groundwater Version 3.1 Advanced Model - Output Values for Residential Scenaric

SSA 14, NWS Yorktown, Yorktown, VA

CASRN	Chemical	Groundwater Concentration (ug/L)	Diffusivity in air, Da (cm2/s)	Diffusivity in water, Dw (cm2/s)	Henry's law constant at reference temperature, H (atm-m3/mol)	Henry's law constant reference temperature, TR (oC)	Enthalpy of vaporization at the normal boiling point, DHv,b (cal/mol)	Normal boiling point, TB (oK)	Critical temperature, TC (oK)	Organic carbon partition coefficient, Koc (cm3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF (mg/m3)-1	Reference conc., RfC (mg/m3)
Residential Scenario													
75-34-3	1,1-Dichloroethane	47	8.4E-02	1.1E-05	5.6E-03	2.4E+01	6.9E+03	3.3E+02	5.2E+02	3.2E+01	5.0E+03	1.6E-06	0.0E+00
75-35-4	1,1-Dichlorethene	400	8.6E-02	1.1E-05	2.6E-02	2.4E+01	6.2E+03	3.0E+02	5.8E+02	3.2E+01	2.4E+03	0.0E+00	2.0E-01
156-59-2	cis-1,2-Dichloroethylene	130	8.8E-02	1.1E-05	4.1E-03	2.5E+01	7.2E+03	3.3E+02	5.4E+02	4.0E+01	6.4E+03	0.0E+00	0.0E+00
79-01-6	Trichloroethene	1400	6.9E-02	1.0E-05	9.9E-03	2.4E+01	7.5E+03	3.6E+02	5.4E+02	6.1E+01	1.3E+03	2.0E-06	0.0E+00

CASRN	Chemical	Exposure duration, t (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
Residential Scenario															
75-34-3	1,1-Dichloroethane	9.5E+08	2.3E+02	2.7E-01	ERROR	ERROR	2.8E-01	1.5E-09	8.4E-01	1.3E-09	1.9E+02	4.8E-01	5.7E-02	4.2E-01	4.0E+03
75-35-4	1,1-Dichlorethene	9.5E+08	2.3E+02	2.7E-01	ERROR	ERROR	2.8E-01	1.5E-09	8.4E-01	1.3E-09	1.9E+02	4.8E-01	5.7E-02	4.2E-01	4.0E+03
156-59-2	cis-1,2-Dichloroethylene	9.5E+08	2.3E+02	2.7E-01	ERROR	ERROR	2.8E-01	1.5E-09	8.4E-01	1.3E-09	1.9E+02	4.8E-01	5.7E-02	4.2E-01	4.0E+03
79-01-6	Trichloroethene	9.5E+08	2.3E+02	2.7E-01	ERROR	ERROR	2.8E-01	1.5E-09	8.4E-01	1.3E-09	1.9E+02	4.8E-01	5.7E-02	4.2E-01	4.0E+03

CASRN	Chemical	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. groundwate temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
Residential Scenario															
75-34-3	1,1-Dichloroethane	1.7E+04	1.1E+06	3.8E-04	1.5E+01	7.4E+03	4.3E-03	1.8E-01	1.8E-04	4.4E-03	0.0E+00	0.0E+00	4.2E-05	5.0E-05	2.3E+02
75-35-4	1,1-Dichlorethene	1.7E+04	1.1E+06	3.8E-04	1.5E+01	6.3E+03	2.1E-02	8.7E-01	1.8E-04	4.5E-03	0.0E+00	0.0E+00	3.0E-05	3.7E-05	2.3E+02
156-59-2	cis-1,2-Dichloroethylene	1.7E+04	1.1E+06	3.8E-04	1.5E+01	7.7E+03	2.9E-03	1.2E-01	1.8E-04	4.6E-03	0.0E+00	0.0E+00	5.0E-05	6.0E-05	2.3E+02
79-01-6	Trichloroethene	1.7E+04	1.1E+06	3.8E-04	1.5E+01	8.5E+03	7.2E-03	3.0E-01	1.8E-04	3.6E-03	0.0E+00	0.0E+00	3.0E-05	3.6E-05	2.3E+02

CASRN	Chemical	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	**Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)**
Residential Scenario										
75-34-3	1,1-Dichloroethane	1.5E+01	8.4E+03	1.0E-01	8.3E+01	4.4E-03	4.0E+02	3.0E+207	1.4E-05	**1.1E-01**
75-35-4	1,1-Dichlorethene	1.5E+01	3.5E+05	1.0E-01	8.3E+01	4.5E-03	4.0E+02	5.2E+202	9.9E-06	**3.4E+00**
156-59-2	cis-1,2-Dichloroethylene	1.5E+01	1.6E+04	1.0E-01	8.3E+01	4.6E-03	4.0E+02	1.1E+198	1.6E-05	**2.6E-01**
79-01-6	Trichloroethene	1.5E+01	4.2E+05	1.0E-01	8.3E+01	3.6E-03	4.0E+02	4.2E+252	9.8E-06	**4.1E+00**

Table 12
Comparison of Non-Detected Chemicals to Regional Screening Levels
Groundwater at Site 34, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening Toxicity Value ug/L	[1]
79-34-5	1,1,2,2-Tetrachloroethane	10 - 10	1.0E+01	6.7E-02	C
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	10 - 10	1.0E+01	5.9E+03	N
120-82-1	1,2,4-Trichlorobenzene	10 - 10	1.0E+01	4.1E-01	C**
96-12-8	1,2-Dibromo-3-chloropropane	10 - 10	1.0E+01	3.2E-04	C
106-93-4	1,2-Dibromoethane	10 - 10	1.0E+01	6.5E-03	C
95-50-1	1,2-Dichlorobenzene	10 - 10	1.0E+01	3.7E+01	N
78-87-5	1,2-Dichloropropane	10 - 10	1.0E+01	3.9E-01	C*
541-73-1	1,3-Dichlorobenzene	10 - 10	1.0E+01	4.3E-01	C
106-46-7	1,4-Dichlorobenzene	10 - 10	1.0E+01	4.3E-01	C
78-93-3	2-Butanone	10 - 10	1.0E+01	7.1E+02	N
591-78-6	2-Hexanone	10 - 10	1.0E+01	4.7E+00	N
108-10-1	4-Methyl-2-pentanone	10 - 10	1.0E+01	2.0E+02	N
67-64-1	Acetone	10 - 10	1.0E+01	2.2E+03	N
71-43-2	Benzene	10 - 10	1.0E+01	4.1E-01	C
75-27-4	Bromodichloromethane	10 - 10	1.0E+01	1.2E-01	C
75-25-2	Bromoform	10 - 10	1.0E+01	8.5E+00	C*
74-83-9	Bromomethane	10 - 10	1.0E+01	8.7E-01	N
75-15-0	Carbon disulfide	10 - 10	1.0E+01	1.0E+02	N
56-23-5	Carbon tetrachloride	10 - 10	1.0E+01	4.4E-01	C
108-90-7	Chlorobenzene	10 - 10	1.0E+01	9.1E+00	N
75-00-3	Chloroethane	10 - 10	1.0E+01	2.1E+03	N
67-66-3	Chloroform	10 - 10	1.0E+01	1.9E-01	C
74-87-3	Chloromethane	10 - 10	1.0E+01	1.9E+01	N
10061-01-5	cis-1,3-Dichloropropene	10 - 10	1.0E+01	4.3E-01	C*
110-82-7	Cyclohexane	10 - 10	1.0E+01	1.3E+03	N
124-48-1	Dibromochloromethane	10 - 10	1.0E+01	1.5E-01	C
75-71-8	Dichlorodifluoromethane (Freon-12)	10 - 10	1.0E+01	3.9E+01	N
100-41-4	Ethylbenzene	10 - 10	1.0E+01	1.5E+00	C
98-82-8	Isopropylbenzene	10 - 10	1.0E+01	6.8E+01	N
79-20-9	Methyl acetate	10 - 10	1.0E+01	3.7E+03	N
108-87-2	Methylcyclohexane	10 - 10	1.0E+01	NA	
75-09-2	Methylene chloride	10 - 10	1.0E+01	4.8E+00	C
1634-04-4	Methyl-tert-butyl ether (MTBE)	10 - 10	1.0E+01	1.2E+01	C
100-42-5	Styrene	10 - 10	1.0E+01	1.6E+02	N
108-88-3	Toluene	10 - 10	1.0E+01	2.3E+02	N
10061-02-6	trans-1,3-Dichloropropene	10 - 10	1.0E+01	4.3E-01	C*
75-69-4	Trichlorofluoromethane(Freon-11)	10 - 10	1.0E+01	1.3E+02	N
75-01-4	Vinyl chloride	10 - 10	1.0E+01	1.6E-02	C

Table 12
Comparison of Non-Detected Chemicals to Regional Screening Levels
Groundwater at Site 34, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening Toxicity Value [1] ug/L	
1330-20-7	Xylene, total	10 - 10	1.0E+01	2.0E+01	N
121-14-2	2,4-Dinitrotoluene	0.15 - 0.16	1.6E-01	2.2E-01	C
606-20-2	2,6-Dinitrotoluene	0.15 - 0.16	1.6E-01	3.7E+00	N
99-65-0	1,3-Dinitrobenzene	0.15 - 0.16	1.6E-01	3.7E-01	N
118-96-7	2,4,6-Trinitrotoluene	0.15 - 0.16	1.6E-01	1.8E+00	C**
88-72-2	2-Nitrotoluene	0.48 - 0.52	5.2E-01	3.1E-01	C
618-87-1	3,5-Dinitroaniline	0.97 - 24	2.4E+01	3.7E-01	N
99-08-1	3-Nitrotoluene	0.48 - 0.52	5.2E-01	3.7E-01	N
99-99-0	4-Nitrotoluene	0.48 - 0.52	5.2E-01	4.2E+00	C*
55-63-0	Nitroglycerin	0.97 - 1	1.0E+00	3.7E-01	N
556-88-7	Nitroguanidine	20 - 20	2.0E+01	3.7E+02	N
78-11-5	PETN	0.97 - 1	1.0E+00	NA	
479-45-8	Tetryl	0.15 - 0.16	1.6E-01	1.5E+01	N
7440-36-0	Antimony	60 - 60	6.0E+01	1.5E+00	N
7440-50-8	Copper	25 - 25	2.5E+01	1.5E+02	N
57-12-5	Cyanide	10 - 10	1.0E+01	7.3E+01	N
7439-97-6	Mercury	0.2 - 0.2	2.0E-01	1.1E+00	N
7782-49-2	Selenium	35 - 35	3.5E+01	1.8E+01	N
7440-22-4	Silver	10 - 10	1.0E+01	1.8E+01	N
7440-28-0	Thallium	25 - 25	2.5E+01	NA	
7429-90-5	Aluminum, Dissolved	200 - 200	2.0E+02	3.7E+03	N
7440-36-0	Antimony, Dissolved	60 - 60	6.0E+01	1.5E+00	N
7440-41-7	Beryllium, Dissolved	5 - 5	5.0E+00	7.3E+00	N
7440-43-9	Cadmium, Dissolved	5 - 5	5.0E+00	1.8E+00	N
7440-48-4	Cobalt, Dissolved	50 - 50	5.0E+01	1.1E+00	N
7440-50-8	Copper, Dissolved	25 - 25	2.5E+01	1.5E+02	N
7439-97-6	Mercury, Dissolved	0.2 - 0.2	2.0E-01	1.1E+00	N
7782-49-2	Selenium, Dissolved	35 - 35	3.5E+01	1.8E+01	N
7440-22-4	Silver, Dissolved	10 - 10	1.0E+01	1.8E+01	N
7440-28-0	Thallium, Dissolved	25 - 25	2.5E+01	NA	
7440-62-2	Vanadium, Dissolved	50 - 50	5.0E+01	1.8E+01	N

[1] Oak Ridge National Laboratory (ORNL).Nov. 2010. Regional Screening Levels for Chemical Contaminants at Super
[Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml

RSL value for 1,4-dichlorobenzene used as surrogate for 1,3-dichlorobenzene

RSL value for 1,3-dinitrobenzene used ad a surrogate for 3,5-dinitroaniline.

RSL value for Methyl Isobutyl Ketone (4-methyl-2-pentanone) used as surrogate for 2-Hexanone.

RSL value for Manganese (water) used as surrogate for manganese.

RSL value for Mercuric chloride used as surrogate for mercury.

RSL value for 1,3-dichloropropene used as a surrogate for cis-1,3-dichloropropene and trans-1,3-dichloropropene.

Table 12
Comparison of Non-Detected Chemicals to Regional Screening Levels
Groundwater at Site 34, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening [1] Toxicity Value ug/L

Definitions: C = Carcinogenic

C* = Carcinogenic, N screening level < 100x C screening level, C screening value used as screening le

C** = N screening level < 10x C screening level, therefore N screening value/10 used as screening lev

N = Noncarcinogenic

NTX = No Toxicity Information

DLBSL = Detection limit below screening level

DLASL = Detection limit above screening level

ug/L = microgram per liter

Appendix I
Risk Tables for Surface Water and Sediment

TABLE 1

SELECTION OF EXPOSURE PATHWAYS

Site 8 and SSA 14, Yorktown, Yorktown, VA

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	OnSite/ OffSite	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Surface Water	Surface Water	Surface Water	Trespasser/Visitor	Adult	Dermal Absorption	On-site	Quant	Trespassers/visitors could contact surface water in the Un-named Tributary and the Eastern Branch of Felgates Creek.
						Ingestion	On-site	Quant	Trespassers/visitors could contact surface water in the Un-named Tributary and the Eastern Branch of Felgates Creek.
					Adolescent	Dermal Absorption	On-site	Quant	Trespassers/visitors could contact surface water in the Un-named Tributary and the Eastern Branch of Felgates Creek.
						Ingestion	On-site	Quant	Trespassers/visitors could contact surface water in the Un-named Tributary and the Eastern Branch of Felgates Creek.
					Child	Dermal Absorption	On-site	Quant	Trespassers/visitors could contact surface water in the Un-named Tributary and the Eastern Branch of Felgates Creek.
						Ingestion	On-site	Quant	Trespassers/visitors could contact sediment in the Un-named Tributary and the Eastern Branch of Felgates Creek.
	Sediment	Sediment	Sediment	Trespasser/Visitor	Adult	Dermal Absorption	On-site	Quant	Trespassers/visitors could contact sediment in the Un-named Tributary and the Eastern Branch of Felgates Creek.
						Ingestion	On-site	Quant	Trespassers/visitors could contact sediment in the Un-named Tributary and the Eastern Branch of Felgates Creek.
					Adolescent	Dermal Absorption	On-site	Quant	Trespassers/visitors could contact sediment in the Un-named Tributary and the Eastern Branch of Felgates Creek.
						Ingestion	On-site	Quant	Trespassers/visitors could contact sediment in the Un-named Tributary and the Eastern Branch of Felgates Creek.
					Child	Dermal Absorption	On-site	Quant	Trespassers/visitors could contact sediment in the Un-named Tributary and the Eastern Branch of Felgates Creek.
						Ingestion	On-site	Quant	Trespassers/visitors could contact sediment in the Un-named Tributary and the Eastern Branch of Felgates Creek.
Future	Surface Water	Surface Water	Surface Water	Construction Worker	Adult	Dermal Absorption	On-site	Quant	Construction workers could contact surface water in the Un-named Tributary and the Eastern Branch of Felgates Creek.
						Ingestion	On-site	Quant	Construction workers could contact surface water in the Un-named Tributary and the Eastern Branch of Felgates Creek.
	Sediment	Sediment	Sediment	Construction Worker	Adult	Dermal Absorption	On-site	Quant	Construction workers could contact sediment in the Un-named Tributary and the Eastern Branch of Felgates Creek.
						Ingestion	On-site	Quant	Construction workers could contact sediment in the Un-named Tributary and the Eastern Branch of Felgates Creek.

Quant: will be quantitatively evaluated.

None: Not considered to be a complete pathway, therefore, not evaluated.

Table 2.1

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Sites 8 and 34, NWS, Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Surface Water	2691-41-0	HMX	2.1E-01 J	2.1E-01 J	UG_L	YS08-SW04-1207	1/8	0.15 - 0.16	2.1E-01	ND	1.8E+03 N	N/A		NO	BSL
	98-95-3	Nitrobenzene	5.0E-02 J	5.0E-02 J	UG_L	YSA14-SW02-1207	1/8	0.15 - 0.16	5.0E-02	ND	1.2E+00 C	6.9E+02	AWQC	NO	BSL
	121-82-4	RDX	4.1E-02 J	4.1E-02 J	UG_L	YS08-SW04-1207	1/8	0.24 - 0.26	4.1E-02	ND	6.1E+00 C	N/A		NO	BSL
	7429-90-5	Aluminum	2.8E+02	1.2E+03	UG_L	YSA14-SW02-1207	8/8	200 - 200	1.2E+03	1.5E+03	3.7E+04 N	N/A		NO	BSL
	7440-38-2	Arsenic	3.7E+00 J	3.7E+00 J	UG_L	YS08-SW04-1207	1/8	10 - 10	3.7E+00	3.6E+00	4.5E-01 C	N/A	AWQC	YES	ASL
	7440-39-3	Barium	3.1E+01 J	3.8E+01 J	UG_L	YSA14-SW01-1207	8/8	200 - 200	3.8E+01	3.6E+01	7.3E+03 N	N/A		NO	BSL
	7440-41-7	Beryllium	1.6E-01 J	1.6E-01 J	UG_L	YSA14-SW05-1207	1/8	5 - 5	1.6E-01	ND	7.3E+01 N	N/A		NO	BSL
	7440-43-9	Cadmium	5.9E-01 J	1.1E+00 J	UG_L	YS08-SW01-1207	4/8	5 - 5	1.1E+00	8.6E-01	1.8E+01 N	N/A		NO	BSL
	7440-70-2	Calcium	2.1E+05	2.3E+05	UG_L	YSA14-SW03-1207	8/8	5000 - 5000	2.3E+05	2.3E+05	N/A	N/A		NO	NUT
	7440-47-3	Chromium	7.4E-01 J	7.4E-01 J	UG_L	YSA14-SW01-1207	1/8	10 - 10	7.4E-01	2.2E+00	4.3E-01 C	N/A		YES	ASL
	7439-89-6	Iron	2.5E+02	1.3E+03	UG_L	YSA14-SW02-1207	8/8	100 - 100	1.3E+03	1.7E+03	2.6E+04 N	N/A		NO	BSL
	7439-95-4	Magnesium	5.7E+05	6.9E+05	UG_L	YSA14-SW03-1207	8/8	5000 - 5000	6.9E+05	6.7E+05	N/A	N/A		NO	NUT
	7439-96-5	Manganese	3.4E+01	6.8E+01	UG_L	YSA14-SW01-1207	8/8	15 - 15	6.8E+01	1.4E+02	8.8E+02 N	N/A		NO	BSL
	7440-02-0	Nickel	1.3E+00 J	1.3E+00 J	UG_L	YSA14-SW02-1207	1/8	40 - 40	1.3E+00	1.0E+00	7.3E+02 N	6.1E+02	AWQC	NO	BSL
	7440-09-7	Potassium	1.6E+05 J	2.4E+05 J	UG_L	YSA14-SW03-1207	8/8	50000 - 500000	2.4E+05	2.3E+05	N/A	N/A		NO	NUT
	7782-49-2	Selenium	3.4E+00 J	3.4E+00 J	UG_L	YSA14-SW03-1207	1/8	35 - 35	3.4E+00	4.0E+00	1.8E+02 N	1.7E+02	AWQC	NO	BSL
	7440-22-4	Silver	1.2E+00 J	1.2E+00 J	UG_L	YSA14-SW05-1207	1/8	10 - 10	1.2E+00	ND	1.8E+02 N	N/A		NO	BSL
	7440-23-5	Sodium	4.5E+06	6.4E+06	UG_L	YSA14-SW03-1207	8/8	50000 - 500000	6.4E+06	6.4E+06	N/A	N/A		NO	NUT

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values from wells YBKG-SW01 through SW06

[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Ten times adjusted (nc RSLs adjusted by dividing by 10) tap water RSLs. RSL value for Manganese (water) used as surrogate for manganese.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered

J = Estimated Value

K = Biased High

L = Biased Low

C = Carcinogenic

N = Noncarcinogenic

N/A = Not available

AWQC = National Ambient Water Quality Criteria

Table 2.2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Sites 8 and 34, NWS, Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Sediment	67-64-1	Acetone	2.1E-02 J	2.9E-02	MG_KG	YS08-SD04-1207	2/8	0.019 - 0.03	2.9E-02	3.9E-02	6.1E+04 N	N/A	N/A	NO	BSL
	75-15-0	Carbon disulfide	1.3E-02 J	1.5E-02 J	MG_KG	YS08-SD04-1207	2/8	0.019 - 0.03	1.5E-02	1.3E-02	7.4E+02 NS	N/A	N/A	NO	BSL
	1330-20-7	Xylene, total	1.5E-02 J	1.5E-02 J	MG_KG	YSA14-SD02-1207	1/8	0.019 - 0.03	1.5E-02	ND	2.6E+02 NS	N/A	N/A	NO	BSL
	7429-90-5	Aluminum	6.4E+03 J	2.7E+04 J	MG_KG	YS08-SD04-1207	8/8	27.1 - 44.9	2.7E+04	2.1E+04	7.7E+04 N	N/A	N/A	NO	BSL
	7440-38-2	Arsenic	8.3E+00	1.3E+01	MG_KG	YS08-SD04-1207	8/8	1.4 - 2.2	1.3E+01	1.5E+01	3.9E+00 C*	N/A	N/A	YES	ASL
	7440-39-3	Barium	1.3E+01 J	4.7E+01 J	MG_KG	YS08-SD04-1207	8/8	27.1 - 44.9	4.7E+01	3.8E+01	1.5E+04 N	N/A	N/A	NO	BSL
	7440-41-7	Beryllium	3.7E-01 J	1.1E+00 J	MG_KG	YS08-SD04-1207 YSA14-SD01-1207	8/8	0.68 - 1.1	1.1E+00	1.1E+00	1.6E+02 N	N/A	N/A	NO	BSL
	7440-43-9	Cadmium	5.8E-02 J	3.2E-01 J	MG_KG	YSA14-SD03-1207	5/8	0.68 - 1.1	3.2E-01	3.0E-01	7.0E+01 N	N/A	N/A	NO	BSL
	7440-70-2	Calcium	2.0E+03	3.9E+03	MG_KG	YSA14-SD02-1207	8/8	677 - 1120	3.9E+03	2.6E+03	N/A	N/A	N/A	NO	NUT
	7440-47-3	Chromium	1.6E+01 J	4.8E+01 J	MG_KG	YS08-SD04-1207	8/8	1.4 - 2.2	4.8E+01	4.3E+01	2.9E+00 C	N/A	N/A	YES	ASL
	7440-48-4	Cobalt	3.3E+00 J	1.1E+01 J	MG_KG	YS08-SD04-1207	8/8	6.8 - 11.2	1.1E+01	8.3E+00	2.3E+01 N	N/A	N/A	NO	BSL
	7440-50-8	Copper	5.3E+00	1.9E+01	MG_KG	YSA14-SD03-1207	8/8	3.4 - 5.6	1.9E+01	1.8E+01	3.1E+03 N	N/A	N/A	NO	BSL
	7439-89-6	Iron	2.6E+04 J	5.0E+04 J	MG_KG	YS08-SD04-1207	8/8	13.5 - 22.5	5.0E+04	3.7E+04	5.5E+04 N	N/A	N/A	NO	BSL
	7439-92-1	Lead	8.3E+00	3.3E+01	MG_KG	YSA14-SD03-1207	8/8	1.4 - 2.2	3.3E+01	3.3E+01	4.0E+02 NL	N/A	N/A	NO	BSL
	7439-95-4	Magnesium	2.4E+03 J	7.7E+03 J	MG_KG	YS08-SD04-1207	8/8	677 - 1120	7.7E+03	6.8E+03	N/A	N/A	N/A	NO	NUT
	7439-96-5	Manganese	1.0E+02 J	4.1E+02 J	MG_KG	YS08-SD04-1207	8/8	2 - 3.4	4.1E+02	5.0E+02	1.8E+03 N	N/A	N/A	NO	BSL
	7439-97-6	Mercury	1.1E-01 L	1.6E-01 J	MG_KG	YSA14-SD03-1207	4/8	0.67 - 1.2	1.6E-01	2.7E-01	2.3E+01 N	N/A	N/A	NO	BSL
	7440-02-0	Nickel	5.8E+00	2.0E+01	MG_KG	YS08-SD04-1207	8/8	5.4 - 9	2.0E+01	1.7E+01	1.5E+03 N	N/A	N/A	NO	BSL
	7440-09-7	Potassium	2.0E+03 J	4.8E+03 J	MG_KG	YS08-SD04-1207	8/8	677 - 1120	4.8E+03	4.2E+03	N/A	N/A	N/A	NO	NUT
	7440-22-4	Silver	1.1E-01 J	1.2E+00 J	MG_KG	YSA14-SD01-1207	6/8	1.4 - 2.2	1.2E+00	1.1E+01	3.9E+02 N	N/A	N/A	NO	BSL
	7440-23-5	Sodium	3.4E+03 J	1.3E+04	MG_KG	YS08-SD01-1207	8/8	677 - 1120	1.3E+04	1.1E+04	N/A	N/A	N/A	NO	NUT
	7440-62-2	Vanadium	1.9E+01 J	6.1E+01 J	MG_KG	YS08-SD04-1207	8/8	6.8 - 11.2	6.1E+01	5.2E+01	3.9E+02 N	N/A	N/A	NO	BSL
	7440-66-6	Zinc	3.5E+01	1.3E+02	MG_KG	YSA14-SD03-1207	8/8	8.1 - 13.5	1.3E+02	1.2E+02	2.3E+04 N	N/A	N/A	NO	BSL

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values from wells YBKG-SD01 through SD06

[4] Oak Ridge National Laboratory (ORNL). November 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online].
Available: http://epa-prgs.ornl.gov/chemicals/index.shtml. Ten times the adjusted (nc RSLs adjusted by dividing by 10) residential soil RSLs.
RSL value for Chromium VI (particulates) used as surrogate for chromium.
The soil value of 400 mg/kg for lead is from the Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, USEPA, July 14, 1994.
RSL value for Manganese (water) used as surrogate for manganese.
RSL value for Mercury (inorganic salts) used as surrogate for mercury.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered

J = Estimated Value

K = Biased High

L = Biased Low

C = Carcinogenic

N = Noncarcinogenic

NS = RSL exceeds saturation concentration (Csat), therefore, Csat used as screening value

NL = Lead soil screening value not adjusted for sediment (not multiplied by 10)

N/A = Not available

ND = Not Detected

Table 3.1.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8 and SSA 14, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Surface Water	Arsenic	UG_L	3.9E+00	4.8E+00	N	3.7E+00	J	3.7E+00	UG_L	Max	1, 2, 3, 5
	Chromium	UG_L	3.5E-01	7.3E-01	NP	7.4E-01	J	7.3E-01	UG_L	95% Cheb-m	4

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).
Statstics: Maximum Detected Value (Max); 95% Chebyshev (mean, std) UCL (95% Cheb-m)

(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma

UG/L = micrograms liter
J = Estimated Value

Table 3.2.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Site 8 and SSA 14, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)		Maximum Concentration (Qualifier)		Exposure Point Concentration			
								Value	Units	Statistic	Rationale
Sediment	Arsenic	mg/kg	1.1E+01	1.2E+01	N	1.3E+01		1.2E+01	UG_L	95% Stud-t	1, 2, 3
	Chromium	mg/kg	3.8E+01	4.4E+01	N P	4.8E+01	J	4.4E+01	UG_L	95% Mod-t	4

ProUCL, Version 4.1 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. March 2011. Prepared by Lockheed Martin Environmental Services).
Statstics: 95% Student-t UCL (95% Stud-t); 95% Modified-t UCL (95% Mod-t)

(1) Shapiro-Wilk W Test/Lilliefors test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive
(5) Max value used because 95% UCL greater than max.

N = Normal
T = Log-Transformed
NP = Non-Parametric
G = Gamma

mg/kg = milligrams per kilogram
J = Estimated Value

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8 and SSA 14, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Trespasser/Visitor	Adult	Surface Water	CW	Chemical Concentration in Water	See Table 3.1.RME	µg/l	See Table 3.1.RME	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-W	Ingestion Rate of Water	0.05	liters/day	EPA, 1989	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	52	days/year	Prof Judgment (1)	
				ED	Exposure Duration	24	years	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Adolescent	Surface Water	CW	Chemical Concentration in Water	See Table 3.1.RME	µg/l	See Table 3.1.RME	CDI (mg/kg-day) =
				IR-W	Ingestion Rate of Water	0.05	liters/day	EPA, 1989	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	52	days/year	Prof Judgment (1)	
				ED	Exposure Duration	9	years	(2)	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	51	kg	EPA, 1997, (3)	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
		Child	Surface Water	CW	Chemical Concentration in Water	See Table 3.1.RME	µg/l	See Table 3.1.RME	CDI (mg/kg-day) =
				IR-W	Ingestion Rate of Water	0.05	liters/day	EPA, 1989	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	52	days/year	Prof Judgment (1)	
				ED	Exposure Duration	6	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
	Construction Worker	Adult	Surface Water	CW	Chemical Concentration in Water	See Table 3.1.RME	µg/l	See Table 3.1.RME	CDI (mg/kg-day) =
				IR-W	Ingestion Rate of Water	0.05	liters/day	EPA, 1989	CW x IR-W x EF x ED x CF2 x 1/BW x 1/AT
				EF	Exposure Frequency	10	days/year	Prof Judgment (4)	
				ED	Exposure Duration	1	years	EPA, 1991	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8 and SSA 14, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Trespasser/Visitor	Adult	Surface Water	CW	Chemical Concentration in Water	See Table 3.1.RME	µg/l	See Table 3.1.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	1	hr/event	Prof Judgment (1)	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	EPA,2004, (5)	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	52	days/year	Prof Judgment (1)	
				ED	Exposure Duration	24	years	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
		Adolescent	Surface Water	CW	Chemical Concentration in Water	See Table 3.1.RME	µg/l	See Table 3.1.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	1	hr/event	Prof Judgment (1)	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	4,046	cm^2	EPA, 2004 (4)	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	52	days/year	Prof Judgment (1)	
				ED	Exposure Duration	9	years	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	51	kg	EPA, 1997, (3)	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

TABLE 4.1.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

Site 8 and SSA 14, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Trespasser/Visitor	Child	Surface Water	CW	Chemical Concentration in Water	See Table 3.1.RME	µg/l	See Table 3.1.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	1	hr/event	Prof Judgment (1)	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	1,980	cm^2	EPA, 2004, (5)	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	52	days/year	Prof Judgment (1)	
				ED	Exposure Duration	6	years	EPA, 2004	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	15	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	
	Construction Worker	Adult	Surface Water	CW	Chemical Concentration in Water	See Table 3.1.RME	µg/l	See Table 3.1.RME	CDI (mg/kg-day) =
				DAevent	Dermally Absorbed Dose per Event	calculated	mg/cm^2-event	calculated	DAevent x SA x EV x EF x ED x 1/BW x 1/AT
				FA	Fraction absorbed water	chemical specific	dimensionless	EPA, 2004	
				K_p	Permeability Coefficient	chemical specific	cm/hr	EPA, 2004	Inorganics: DAevent (mg/cm^2-event) =
				τ	Lag Time	chemical specific	hr/event	EPA, 2004	Kp x CW x t_{event} x CF2 x CF3
				t*	Time to Reach Steady-state	chemical specific	hours	EPA, 2004	
				B	Ratio of Permeability of Stratum Corneum to Epidermis	chemical specific	dimensionless	EPA, 2004	Organics :
				t_{event}	Event Time	8	hr/day	(1)	t_{event}<t*: DAevent (mg/cm^2-event) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	EPA, 2004, (5)	2 x FA x Kp x CW x (sqrt((6 x τ x t_{event})/π))
				EV	Event Frequency	1	events/day	EPA, 2004	x CF2 x CF3
				EF	Exposure Frequency	10	days/year	Prof Judgment (4)	
				ED	Exposure Duration	1	years	EPA, 1991	t_{event}>t*: DAevent (mg/cm^2-event) =
				BW	Body Weight	70	kg	EPA, 1991	FA x Kp x CW x (t_{event}/(1+B) + 2 x τ x
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	((1 + 3B + $3B^2$)/$(1+B)^2$)) x CF2 x CF3
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	
				CF2	Conversion Factor 2	0.001	mg/µg	- -	
				CF3	Conversion Factor 3	0.001	l/cm^3	- -	

(1) Professional judgment assuming 1 day per week for 52 weeks per year, and 1 hour per day.

(2) Professional judgement assuming adolescents from 9 to 18 years of age.

(3) Body weight is average of the mean values for boys and girls for the ages 9 through 18.

TABLE 4.1.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

Site 8 and SSA 14, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name

(4) Professional judgment assuming construction worker in contact with surface water 10 days (2 weeks) per construction activity.

(5) The skin surface area includes hands, forearms, lower legs, and feet.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.

EPA, 2004 . Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment (Final). EPA/540/R/99/005. July 2004.

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8 and SSA 14, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Trespasser/Visitor	Adult	Sediment	CSed	Chemical Concentration in Sediment	See Table 3.2.RME	mg/kg	See Table 3.2.RME	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-Sed	Ingestion Rate of Sediment	50	mg/day	(1)	CSed x IR-Sed x EF x ED x CF1 x 1/BW x 1/AT
				EF	Exposure Frequency	52	days/year	Prof Judgment (2)	
				ED	Exposure Duration	24	years	EPA, 1991	
				CF1	Conversion Factor 1	0.000001	kg/mg	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Adolescent	Sediment	CSed	Chemical Concentration in Sediment	See Table 3.2.RME	mg/kg	See Table 3.2.RME	CDI (mg/kg-day) =
				IR-Sed	Ingestion Rate of Sediment	50	mg/day	(1)	CSed x IR-Sed x EF x ED x CF3 x 1/BW x 1/AT
				EF	Exposure Frequency	52	days/year	Prof Judgment (2)	
				ED	Exposure Duration	9	years	(3)	
				CF3	Conversion Factor 3	0.000001	kg/mg	- -	
				BW	Body Weight	51	kg	EPA, 1997, (4)	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
		Child	Sediment	CSed	Chemical Concentration in Sediment	See Table 3.2.RME	mg/kg	See Table 3.2.RME	CDI (mg/kg-day) =
				IR-Sed	Ingestion Rate of Sediment	100	mg/day	(1)	CSed x IR-Sed x EF x ED x CF3 x 1/BW x 1/AT
				EF	Exposure Frequency	52	days/year	Prof Judgment (2)	
				ED	Exposure Duration	6	years	EPA, 1991	
				CF3	Conversion Factor 3	0.000001	kg/mg	- -	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	
	Construction Worker	Adult	Sediment	CSed	Chemical Concentration in Sediment	See Table 3.2.RME	mg/kg	See Table 3.2.RME	CDI (mg/kg-day) =
				IR-Sed	Ingestion Rate of Sediment	240	mg/day	(1)	CSed x IR-Sed x EF x ED x CF3 x 1/BW x 1/AT
				EF	Exposure Frequency	10	days/year	Prof Judgment (5)	
				ED	Exposure Duration	1	years	EPA, 1991	
				CF3	Conversion Factor 3	0.000001	kg/mg	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	

TABLE 4.2.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Site 8 and SSA 14, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Trespasser/Visitor	Adult	Sediment	CSed	Chemical Concentration in Sediment	See Table 3.2.RME	mg/kg	See Table 3.2.RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	EPA, 2004, (6)	CSed x SA x SSAF x DABS x CF1 x EF x
				SSAF	Soil to Skin Adherence Factor	0.3	mg/cm^2-day	EPA, 2004, (7)	ED x 1/BW x 1/AT
				DABS	Dermal Absorption Factor Solids	Chemical specific	--	EPA, 2004	
				CF1	Conversion Factor 1	0.000001	kg/mg	- -	
				EF	Exposure Frequency	52	days/year	(2)	
				ED	Exposure Duration	24	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Adolescent	Sediment	CSed	Chemical Concentration in Sediment	See Table 3.2.RME	mg/kg	See Table 3.2.RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	4,046	cm^2	EPA, 2004, (6)	CSed x SA x SSAF x DABS x CF3 x EF x
				SSAF	Soil to Skin Adherence Factor	0.2	mg/cm^2-day	EPA, 2004, (8)	ED x 1/BW x 1/AT
				DABS	Dermal Absorption Factor Solids	chem specific	--	EPA, 2004	
				CF3	Conversion Factor 3	0.000001	kg/mg	- -	
				EF	Exposure Frequency	52	days/year	(2)	
				ED	Exposure Duration	9	years	(3)	
				BW	Body Weight	51	kg	EPA, 1997, (4)	
				AT-C	Averaging Time (Cancer)	25550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3285	days	EPA, 1989	
		Child	Sediment	CSed	Chemical Concentration in Sediment	See Table 3.2.RME	mg/kg	See Table 3.2.RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	1,980	cm^2	EPA, 2004, (6)	CSed x SA x SSAF x DABS x CF3 x EF x
				SSAF	Soil to Skin Adherence Factor	0.2	mg/cm^2-day	EPA, 2004, (8)	ED x 1/BW x 1/AT
				DABS	Dermal Absorption Factor Solids	chem specific	--	EPA, 2004	
				CF3	Conversion Factor 3	0.000001	kg/mg	- -	
				EF	Exposure Frequency	52	days/year	(2)	
				ED	Exposure Duration	6	years	EPA, 2004	
				BW	Body Weight	15	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	days	EPA, 1989	

TABLE 4.2.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

Site 8 and SSA 14, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Construction Worker	Adult	Sediment	CSed	Chemical Concentration in Sediment	See Table 3.2.RME	mg/kg	See Table 3.2.RME	CDI (mg/kg-day) =
				SA	Skin Surface Area Available for Contact	5,700	cm^2	EPA, 2004, (6)	CSed x SA x SSAF x DABS x CF3 x EF x
				SSAF	Soil to Skin Adherence Factor	0.3	mg/cm^2-day	EPA, 2004, (7)	ED x 1/BW x 1/AT
				DABS	Dermal Absorption Factor Solids	chem specific	--	EPA, 2004	
				CF3	Conversion Factor 3	0.000001	kg/mg	- -	
				EF	Exposure Frequency	10	days/year	Prof Judgment (5)	
				ED	Exposure Duration	1	years	EPA, 1991	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	days	EPA, 1989	

(1) Professional Judgement assuming 1/2 the default value for the residential and construction worker soil scenarios.
(2) Professional Judgment assuming 1 day per week for 52 weeks per year
(3) Professional Judgement assuming adolescents from 9 to 18 years of age.
(4) Body weight is average of the mean values for boys and girls for the ages 9 through 18.
(5) Professional judgment assuming construction worker in contact with sediment 10 days (2 weeks) per construction activity.
(6) The skin surface area includes hands, forearms, lower legs, and feet.
(7) RME SSAF is geometric mean soil adherence factor for reed gatherers.
(8) RME SSAF is geometric mean soil adherence factor for children playing in wet soil.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.
EPA, 1997: Exposure Factors Handbook. EPA/600/P-95/002Fa.
EPA, 2004 . Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment (Final). EPA/540/R/99/005. July 2004.

TABLE 5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Sites 8 and 34, NWS Yorktown

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (MM/DD/YY)
Arsenic	Chronic	3.0E-04	mg/kg-day	95%	3.0E-04	mg/kg-day	Skin, Vascular	3/1	IRIS	2/11/2010
	Subchronic	3.0E-04	mg/kg-day	95%	3.0E-04	mg/kg-day	Skin, Vascular	3	HEAST	7/01/1997
Chromium	Chronic	3.0E-03	mg/kg-day	2.5%	7.5E-05	mg/kg-day	Not identified	300/3	IRIS	2/11/2010
	Subchronic	2.0E-02	mg/kg-day	2.5%	5.0E-04	mg/kg-day	Not identified	100	HEAST	7/01/1997

(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health Evalution Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Final. Section 4.2 and Exhibit 4-1. USEPA recommends that the oral RfD should not be adjusted to estimate the absorbed dose for compounds when the absorption efficiency is greater than 50%. Constituents that do not have oral absorption efficiencies reported on this table were assumed to have an oral absorption efficiency of 100%.

(2) Provide equation for derivation in text.

(3) For IRIS values, provide the date IRIS was searched. For HEAST values, provide the date of HEAST.

Definitions: IRIS = Integrated Risk Information System
HEAST= Health Effects Assessment Summary Tables

TABLE 5.2
NON-CANCER TOXICITY DATA -- INHALATION
Sites 8 and 34, NWS Yorktown

Chemical of Potential Concern	Chronic/ Subchronic	Value Inhalation RfC	Units	Adjusted Inhalation RfD (1)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfC:RfD: Target Organ	Dates (2) (MM/DD/YY)
Arsenic	Chronic Subchronic	1.5E-05 N/A	mg/m^3 N/A	4.3E-06 N/A	mg/kg-day N/A	Developmental, Cardiovascular, Nervous System N/A	3/1 N/A	Cal EPA N/A	2/11/2010 N/A
Chromium	Chronic Subchronic	1.0E-04 NA	mg/m3 NA	2.9E-05 NA	mg/kg-day NA	Respiratory System NA	300/1 NA	IRIS NA	2/11/2010 NA

(1) Provide equation used for derivation in text.

(2) For IRIS values, provide the date IRIS was searched.
For Cal-EPA values, provide the date Cal-EPA database was searched.
For HEAST values, provide the date of HEAST.

Definitions: IRIS = Integrated Risk Information System
Cal-EPA = California EPA
HEAST= Health Effects Assessment Summary Tables
N/A = Not Applicable

TABLE 6.1

CANCER TOXICITY DATA -- ORAL/DERMAL

Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor (1)	Units	EPA Carcinogen Group	Source	Date (2) (MM/DD/YY)
Arsenic	1.5E+00	95%	1.5E+00	$(mg/kg\text{-}day)^{-1}$	A	IRIS	2/11/2010
Chromium	5.0E-01	2.5%	5.0E-01	$(mg/kg\text{-}day)^{-1}$	D	New Jersey	2/11/2010

CalEPA = California EPA

New Jersey = New Jersey EPA

IRIS = Integrated Risk Information System

N/A = Not available

(1) Refer to RAGS, Part E. July 2004.

(2) For IRIS values, provide the date IRIS was searched.
For NCEA values, provide article date provided by NCEA.

EPA Carcinogen Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

2A - Probable human carcinogen

2B - Possible human carcinogen

TABLE 6.2

CANCER TOXICITY DATA -- INHALATION

Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Unit Risk	Units	Adjustment (1)	Inhalation Cancer Slope Factor	Units	Weight of Evidence/ Cancer Guidance Description	Source	Date (2) (MM/DD/YY)
Arsenic	4.3E-03	$(ug/m3)^{-1}$	3500	1.5E+01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	2/11/2010
Chromium	8.4E-02	$(ug/m3)^{-1}$	3500	2.9E+02	$(mg/kg\text{-}day)^{-1}$	A	IRIS	2/11/2010

CalEPA = California EPA

IRIS = Integrated Risk Information System

NCEA = National Center for Environmental Assessment

N/A = Not Available

(1) Adjustment Factor applied to Unit Risk to calculate Inhalation Slope Factor = 70kg x 1/20m3/day x 1000ug/mg

(2) For IRIS values, provide the date IRIS was searched.
For HEAST values, provide the date of HEAST.
For NCEA values, provide the date of the article provided by NCEA.
For CalEPA values, provide the date CalEPA was searched.

EPA Group:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

2A - Probable human carcinogen

2B - Possible human carcinogen

TABLE 7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Receptor Population: Trespasser/Visitor
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 Water	Surface Water	Surface Water	Ingestion	Arsenic	3.7E+00	ug/L	1.3E-07	mg/kg/day	1.5E+00	1/mg/kg/day	1.9E-07	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.3E-03
				Chromium	7.3E-01	ug/L	2.6E-08	mg/kg/day	5.0E-01	1/mg/kg/day	1.3E-08	7.5E-08	mg/kg/day	3.0E-03	mg/kg/day	2.5E-05
			Exp. Route Total								2.1E-07					1.3E-03
			Dermal Absorption	Arsenic	3.7E+00	ug/L	1.5E-08	mg/kg/day	1.5E+00	1/mg/kg/day	2.2E-08	4.3E-08	mg/kg/day	3.0E-04	mg/kg/day	1.4E-04
				Chromium	7.3E-01	ug/L	5.8E-09	mg/kg/day	5.0E-01	1/mg/kg/day	2.9E-09	1.7E-08	mg/kg/day	7.5E-05	mg/kg/day	2.3E-04
			Exp. Route Total								2.5E-08					3.7E-04
		Exposure Point Total									2.3E-07					1.6E-03
	Exposure Medium Total										2.3E-07					1.6E-03
Medium Total											2.3E-07					1.6E-03
Sediment	Sediment	Sediment	Ingestion	Arsenic	1.2E+01	mg/kg	4.2E-07	mg/kg/day	1.5E+00	1/mg/kg/day	6.3E-07	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.1E-03
				Chromium	4.4E+01	mg/kg	1.5E-06	mg/kg/day	5.0E-01	1/mg/kg/day	7.6E-07	4.4E-06	mg/kg/day	3.0E-03	mg/kg/day	1.5E-03
			Exp. Route Total								1.4E-06					5.6E-03
			Dermal Absorption	Arsenic	1.2E+01	mg/kg	4.3E-07	mg/kg/day	1.5E+00	1/mg/kg/day	6.5E-07	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.2E-03
				Chromium	4.4E+01	mg/kg	5.2E-07	mg/kg/day	5.0E-01	1/mg/kg/day	2.6E-07	1.5E-06	mg/kg/day	7.5E-05	mg/kg/day	2.0E-02
			Exp. Route Total								9.1E-07					2.4E-02
		Exposure Point Total									2.3E-06					3.0E-02
	Exposure Medium Total										2.3E-06					3.0E-02
Medium Total											2.3E-06					3.0E-02
Total of Receptor Risks Across All Media											2.5E-06	Total of Receptor Hazards Across All Media				3.2E-02

Notes-
N/A = Not applicable.
DAevent for exposure to surface water is calculated on Table 7.1.RME Supplement A.

Table 7.1.RME Supplement A
Calculation of DAevent
Trespasser/Visitor Surface Water
Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Water Concentration (CW) (μg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Arsenic	3.7E+00	1.0E-03	NA	NA	NA	NA	1	3.7E-09	1
Chromium-dissolved	7.3E-01	2.0E-03	N/A	N/A	N/A	N/A	1	1.5E-09	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
N/A - not applicable.

TABLE 7.2.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Receptor Population: Trespasser/Visitor
Receptor Age: Adolescent

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 Water	Surface Water	Surface Water	Ingestion	Arsenic	3.7E+00	ug/L	6.6E-08	mg/kg/day	1.5E+00	1/mg/kg/day	1.0E-07	5.2E-07	mg/kg/day	3.0E-04	mg/kg/day	1.7E-03
				Chromium	7.3E-01	ug/L	1.3E-08	mg/kg/day	5.0E-01	1/mg/kg/day	6.6E-09	1.0E-07	mg/kg/day	3.0E-03	mg/kg/day	3.4E-05
			Exp. Route Total								1.1E-07					1.8E-03
			Dermal Absorption	Arsenic	3.7E+00	ug/L	5.4E-09	mg/kg/day	1.5E+00	1/mg/kg/day	8.1E-09	4.2E-08	mg/kg/day	3.0E-04	mg/kg/day	1.4E-04
				Chromium	7.3E-01	ug/L	2.1E-09	mg/kg/day	5.0E-01	1/mg/kg/day	1.1E-09	1.7E-08	mg/kg/day	7.5E-05	mg/kg/day	2.2E-04
			Exp. Route Total								9.1E-09					3.6E-04
		Exposure Point Total									1.2E-07					2.1E-03
	Exposure Medium Total										1.2E-07					2.1E-03
Medium Total											1.2E-07					2.1E-03
Sediment	Sediment	Sediment	Ingestion	Arsenic	1.2E+01	mg/kg	2.2E-07	mg/kg/day	1.5E+00	1/mg/kg/day	3.3E-07	1.7E-06	mg/kg/day	3.0E-04	mg/kg/day	5.6E-03
				Chromium	4.4E+01	mg/kg	7.8E-07	mg/kg/day	5.0E-01	1/mg/kg/day	3.9E-07	6.1E-06	mg/kg/day	3.0E-03	mg/kg/day	2.0E-03
			Exp. Route Total								7.2E-07					7.7E-03
			Dermal Absorption	Arsenic	1.2E+01	mg/kg	1.1E-07	mg/kg/day	1.5E+00	1/mg/kg/day	1.6E-07	8.2E-07	mg/kg/day	3.0E-04	mg/kg/day	2.7E-03
				Chromium	4.4E+01	mg/kg	1.3E-07	mg/kg/day	5.0E-01	1/mg/kg/day	6.3E-08	9.9E-07	mg/kg/day	7.5E-05	mg/kg/day	1.3E-02
			Exp. Route Total								2.2E-07					1.6E-02
		Exposure Point Total									9.4E-07					2.4E-02
	Exposure Medium Total										9.4E-07					2.4E-02
Medium Total											9.4E-07					2.4E-02
Total of Receptor Risks Across All Media											1.1E-06	Total of Receptor Hazards Across All Media				2.6E-02

Notes-
N/A = Not applicable.
DAevent for exposure to surface water is calculated on Table 7.1.RME Supplement A.

TABLE 7.3.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Receptor Population: Trespasser/Visitor
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 Water	Surface Water	Surface Water	Ingestion	Arsenic	3.7E+00	ug/L	1.5E-07	mg/kg/day	1.5E+00	1/mg/kg/day	2.3E-07	1.8E-06	mg/kg/day	3.0E-04	mg/kg/day	5.9E-03
				Chromium	7.3E-01	ug/L	3.0E-08	mg/kg/day	5.0E-01	1/mg/kg/day	1.5E-08	3.5E-07	mg/kg/day	3.0E-03	mg/kg/day	1.2E-04
			Exp. Route Total								2.4E-07					6.0E-03
			Dermal Absorption	Arsenic	3.7E+00	ug/L	6.0E-09	mg/kg/day	1.5E+00	1/mg/kg/day	8.9E-09	7.0E-08	mg/kg/day	3.0E-04	mg/kg/day	2.3E-04
				Chromium	7.3E-01	ug/L	2.4E-09	mg/kg/day	5.0E-01	1/mg/kg/day	1.2E-09	2.8E-08	mg/kg/day	7.5E-05	mg/kg/day	3.7E-04
			Exp. Route Total								1.0E-08					6.0E-04
		Exposure Point Total									2.5E-07					6.6E-03
	Exposure Medium Total										2.5E-07					6.6E-03
Medium Total											2.5E-07					6.6E-03
Sediment	Sediment	Sediment	Ingestion	Arsenic	1.2E+01	mg/kg	9.9E-07	mg/kg/day	1.5E+00	1/mg/kg/day	1.5E-06	1.2E-05	mg/kg/day	3.0E-04	mg/kg/day	3.8E-02
				Chromium	4.4E+01	mg/kg	3.6E-06	mg/kg/day	5.0E-01	1/mg/kg/day	1.8E-06	4.1E-05	mg/kg/day	3.0E-03	mg/kg/day	1.4E-02
			Exp. Route Total								3.3E-06					5.2E-02
			Dermal Absorption	Arsenic	1.2E+01	mg/kg	1.2E-07	mg/kg/day	1.5E+00	1/mg/kg/day	1.8E-07	1.4E-06	mg/kg/day	3.0E-04	mg/kg/day	4.6E-03
				Chromium	4.4E+01	mg/kg	1.4E-07	mg/kg/day	5.0E-01	1/mg/kg/day	7.0E-08	1.6E-06	mg/kg/day	7.5E-05	mg/kg/day	2.2E-02
			Exp. Route Total								2.5E-07					2.6E-02
		Exposure Point Total									3.5E-06					7.9E-02
	Exposure Medium Total										3.5E-06					7.9E-02
Medium Total											3.5E-06					7.9E-02
Total of Receptor Risks Across All Media											3.8E-06	Total of Receptor Hazards Across All Media				8.5E-02

Notes-
N/A = Not applicable.
DAevent for exposure to surface water is calculated on Table 7.1.RME Supplement A.

TABLE 7.4.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Construction Worker
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 Water	Surface Water	Surface Water	Ingestion	Arsenic	3.7E+00	ug/L	1.0E-09	mg/kg/day	1.5E+00	1/mg/kg/day	1.6E-09	7.2E-08	mg/kg/day	3.0E-04	mg/kg/day	2.4E-04
				Chromium	7.3E-01	ug/L	2.0E-10	mg/kg/day	5.0E-01	1/mg/kg/day	1.0E-10	1.4E-08	mg/kg/day	2.0E-02	mg/kg/day	7.2E-07
			Exp. Route Total								1.7E-09					2.4E-04
			Dermal Absorption	Arsenic	3.7E+00	ug/L	9.4E-10	mg/kg/day	1.5E+00	1/mg/kg/day	1.4E-09	6.6E-08	mg/kg/day	3.0E-04	mg/kg/day	2.2E-04
				Chromium	7.3E-01	ug/L	3.7E-10	mg/kg/day	5.0E-01	1/mg/kg/day	1.9E-10	2.6E-08	mg/kg/day	5.0E-04	mg/kg/day	5.2E-05
			Exp. Route Total								1.6E-09					2.7E-04
		Exposure Point Total									3.3E-09					5.1E-04
	Exposure Medium Total										3.3E-09					5.1E-04
Medium Total											3.3E-09					5.1E-04
Sediment	Sediment	Sediment	Ingestion	Arsenic	1.2E+01	mg/kg	1.6E-08	mg/kg/day	1.5E+00	1/mg/kg/day	2.4E-08	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	3.8E-03
				Chromium	4.4E+01	mg/kg	5.9E-08	mg/kg/day	5.0E-01	1/mg/kg/day	2.9E-08	4.1E-06	mg/kg/day	2.0E-02	mg/kg/day	2.1E-04
			Exp. Route Total								5.4E-08					4.0E-03
			Dermal Absorption	Arsenic	1.2E+01	mg/kg	3.5E-09	mg/kg/day	1.5E+00	1/mg/kg/day	5.2E-09	2.4E-07	mg/kg/day	3.0E-04	mg/kg/day	8.1E-04
				Chromium	4.4E+01	mg/kg	4.2E-09	mg/kg/day	5.0E-01	1/mg/kg/day	2.1E-09	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	5.8E-04
			Exp. Route Total								7.3E-09					1.4E-03
		Exposure Point Total									6.1E-08					5.4E-03
	Exposure Medium Total										6.1E-08					5.4E-03
Medium Total											6.1E-08					5.4E-03
Total of Receptor Risks Across All Media											6.4E-08	Total of Receptor Hazards Across All Media				5.9E-03

Notes-
N/A = Not applicable.
DAevent for exposure to surface water is calculated on Table 7.4.RME Supplement A.

Table 7.4.RME Supplement A
Calculation of DAevent
Constructrion Workers Surface Water
Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Chemical of Potential Concern	Water Concentration (CW) (µg/L)	Permeability Coefficient[1] (Kp) (cm/hr)	B[1] (dimensionless)	Lag Time[1] (τ_{event}) (hr)	t*[1] (hr)	Fraction Absorbed Water[1] (FA) (dimensionless)	Duration of Event (tevent) (hr)	DAevent (mg/cm^2-event)	Eq
Arsenic	3.7E+00	1.0E-03	NA	NA	NA	NA	8	3.0E-08	1
Chromium	7.3E-01	2.0E-03	N/A	N/A	N/A	N/A	8	1.2E-08	1

Inorganics: DAevent (mg/cm2-event) =
Kp x CW x tevent x 0.001 mg/ug x 0.001 l/cm^3 (eq 1)

Notes:
[1] Values from EPA 2004, *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment - Final).* EPA/540/R/99/005. The default value of 0.001 was assigned to inorganics not listed in this document.
N/A - not applicable.

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Receptor Population: Trespasser/Visitor
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water	Surface Water	Surface Water										
			Arsenic	1.9E-07	N/A	2.2E-08	2.2E-07	Skin, Vascular	1.3E-03	N/A	1.4E-04	1.4E-03
			Chromium	1.3E-08	N/A	2.9E-09	1.6E-08	Not identifieid	2.5E-05	N/A	2.3E-04	2.5E-04
			Chemical Total	2.1E-07	0.0E+00	2.5E-08	2.3E-07		1.3E-03	0.0E+00	3.7E-04	1.6E-03
		Exposure Point Total					2.3E-07					1.6E-03
	Exposure Medium Total						2.3E-07					1.6E-03
Medium Total							2.3E-07					1.6E-03
Sediment	Sediment	Sediment										
			Arsenic	6.3E-07	N/A	6.5E-07	1.3E-06	Skin, Vascular	4.1E-03	N/A	4.2E-03	8.3E-03
			Chromium	7.6E-07	N/A	2.6E-07	1.0E-06	Not identifieid	1.5E-03	N/A	2.0E-02	2.2E-02
			Chemical Total	1.4E-06	0.0E+00	9.1E-07	2.3E-06		5.6E-03	0.0E+00	2.4E-02	3.0E-02
		Exposure Point Total					2.3E-06					3.0E-02
	Exposure Medium Total						2.3E-06					3.0E-02
Medium Total							2.3E-06					3.0E-02
Receptor Total							2.5E-06				Receptor HI Total	3.2E-02

HI - Hazard Index

Total Skin HI Across All Media =	9.7E-03
Total Vascular HI Across All Media =	9.7E-03

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Receptor Population: Trespasser/Visitor
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water	Surface Water	Surface Water	Arsenic	1.0E-07	N/A	8.1E-09	1.1E-07	Skin, Vascular	1.7E-03	N/A	1.4E-04	1.9E-03
			Chromium	6.6E-09	N/A	1.1E-09	7.6E-09	Not identifieid	3.4E-05	N/A	2.2E-04	2.6E-04
			Chemical Total	1.1E-07	0.0E+00	9.1E-09	1.2E-07		1.8E-03	0.0E+00	3.6E-04	2.1E-03
		Exposure Point Total					1.2E-07					2.1E-03
	Exposure Medium Total						1.2E-07					2.1E-03
Medium Total							1.2E-07					2.1E-03
Sediment	Sediment	Sediment	Arsenic	3.3E-07	N/A	1.6E-07	4.8E-07	Skin, Vascular	5.6E-03	N/A	2.7E-03	8.4E-03
			Chromium	3.9E-07	N/A	6.3E-08	4.6E-07	Not identified	2.0E-03	N/A	1.3E-02	1.5E-02
			Chemical Total	7.2E-07	0.0E+00	2.2E-07	9.4E-07		7.7E-03	0.0E+00	1.6E-02	2.4E-02
		Exposure Point Total					9.4E-07					2.4E-02
	Exposure Medium Total						9.4E-07					2.4E-02
Medium Total							9.4E-07					2.4E-02
Receptor Total							1.1E-06				Receptor HI Total	2.6E-02

HI - Hazard Index

Total Skin HI Across All Media =	1.0E-02
Total Vascular HI Across All Media =	1.0E-02

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Current/Future
Receptor Population: Trespasser/Visitor
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water	Surface Water	Surface Water										
			Arsenic	2.3E-07	N/A	8.9E-09	2.3E-07	Skin, Vascular	5.9E-03	N/A	2.3E-04	6.1E-03
			Chromium	1.5E-08	N/A	1.2E-09	1.6E-08	Not identifieid	1.2E-04	N/A	3.7E-04	4.8E-04
			Chemical Total	2.4E-07	0.0E+00	1.0E-08	2.5E-07		6.0E-03	0.0E+00	6.0E-04	6.6E-03
		Exposure Point Total					2.5E-07					6.6E-03
	Exposure Medium Total						2.5E-07					6.6E-03
Medium Total							2.5E-07					6.6E-03
Sediment	Sediment	Sediment										
			Arsenic	1.5E-06	N/A	1.8E-07	1.7E-06	Skin, Vascular	3.8E-02	N/A	4.6E-03	4.3E-02
			Chromium	1.8E-06	N/A	7.0E-08	1.8E-06	Not identifieid	1.4E-02	N/A	2.2E-02	3.6E-02
			Chemical Total	3.3E-06	0.0E+00	2.5E-07	3.5E-06		5.2E-02	0.0E+00	2.6E-02	7.9E-02
		Exposure Point Total					3.5E-06					7.9E-02
	Exposure Medium Total						3.5E-06					7.9E-02
Medium Total							3.5E-06					7.9E-02
Receptor Total							3.8E-06				Receptor HI Total	8.5E-02

HI - Hazard Index

Total Skin HI Across All Media =	4.9E-02
Total Vascular HI Across All Media =	4.9E-02

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
Sites 8 and 34, NWS Yorktown, Yorktown, Virginia

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water	Surface Water	Surface Water										
			Arsenic	1.6E-09	N/A	1.4E-09	3.0E-09	Skin, Vascular	2.4E-04	N/A	2.2E-04	4.6E-04
			Chromium	1.0E-10	N/A	1.9E-10	2.9E-10	Not identifieid	7.2E-07	N/A	5.2E-05	5.3E-05
			Chemical Total	1.7E-09	0.0E+00	1.6E-09	3.3E-09		2.4E-04	0.0E+00	2.7E-04	5.1E-04
		Exposure Point Total					3.3E-09					5.1E-04
	Exposure Medium Total						3.3E-09					5.1E-04
Medium Total							3.3E-09					5.1E-04
Sediment	Sediment	Sediment										
			Arsenic	2.4E-08	N/A	5.2E-09	3.0E-08	Skin, Vascular	3.8E-03	N/A	8.1E-04	4.6E-03
			Chromium	2.9E-08	N/A	2.1E-09	3.1E-08	Not identifieid	2.1E-04	N/A	5.8E-04	7.9E-04
			Chemical Total	5.4E-08	0.0E+00	7.3E-09	6.1E-08		4.0E-03	0.0E+00	1.4E-03	5.4E-03
		Exposure Point Total					6.1E-08					5.4E-03
	Exposure Medium Total						6.1E-08					5.4E-03
Medium Total							6.1E-08					5.4E-03
Receptor Total							6.4E-08				Receptor HI Total	5.9E-03

HI - Hazard Index

Total Skin HI Across All Media =	5.1E-03
Total Vascular HI Across All Media =	5.1E-03

Table 12.1
Comparison of Non-Detected Chemicals to Regional Screening Levels
Sediment at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits MG/KG	Concentration Used for Screening MG/KG	Screening [1] Toxicity Value MG/KG		Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
71-55-6	1,1,1-Trichloroethane	0.019 - 0.03	3.0E-02	6.4E+02	NS	NO	DLBSL
79-34-5	1,1,2,2-Tetrachloroethane	0.019 - 0.03	3.0E-02	5.6E+00	C	NO	DLBSL
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	0.019 - 0.03	3.0E-02	9.1E+02	NS	NO	DLBSL
79-00-5	1,1,2-Trichloroethane	0.019 - 0.03	3.0E-02	1.1E+01	C	NO	DLBSL
75-34-3	1,1-Dichloroethane	0.019 - 0.03	3.0E-02	3.3E+01	C	NO	DLBSL
75-35-4	1,1-Dichloroethene	0.019 - 0.03	3.0E-02	2.4E+02	N	NO	DLBSL
120-82-1	1,2,4-Trichlorobenzene	0.019 - 0.03	3.0E-02	6.2E+01	C**	NO	DLBSL
96-12-8	1,2-Dibromo-3-chloropropane	0.019 - 0.03	3.0E-02	5.4E-02	C	NO	DLBSL
106-93-4	1,2-Dibromoethane	0.019 - 0.03	3.0E-02	3.4E-01	C	NO	DLBSL
95-50-1	1,2-Dichlorobenzene	0.019 - 0.03	3.0E-02	1.9E+02	NS	NO	DLBSL
107-06-2	1,2-Dichloroethane	0.019 - 0.03	3.0E-02	4.3E+00	C	NO	DLBSL
78-87-5	1,2-Dichloropropane	0.019 - 0.03	3.0E-02	9.0E+00	C*	NO	DLBSL
541-73-1	1,3-Dichlorobenzene	0.019 - 0.03	3.0E-02	2.4E+01	C	NO	DLBSL
106-46-7	1,4-Dichlorobenzene	0.019 - 0.03	3.0E-02	2.4E+01	C	NO	DLBSL
78-93-3	2-Butanone	0.019 - 0.03	3.0E-02	2.8E+04	N	NO	DLBSL
591-78-6	2-Hexanone	0.019 - 0.03	3.0E-02	2.1E+02	N	NO	DLBSL
108-10-1	4-Methyl-2-pentanone	0.019 - 0.03	3.0E-02	5.3E+02	NS	NO	DLBSL
71-43-2	Benzene	0.019 - 0.03	3.0E-02	1.1E+01	C*	NO	DLBSL
75-27-4	Bromodichloromethane	0.019 - 0.03	3.0E-02	2.7E+00	C	NO	DLBSL
75-25-2	Bromoform	0.019 - 0.03	3.0E-02	6.2E+02	C*	NO	DLBSL
74-83-9	Bromomethane	0.019 - 0.03	3.0E-02	7.3E+00	N	NO	DLBSL
56-23-5	Carbon tetrachloride	0.019 - 0.03	3.0E-02	2.5E+00	C	NO	DLBSL
108-90-7	Chlorobenzene	0.019 - 0.03	3.0E-02	2.9E+02	N	NO	DLBSL
75-00-3	Chloroethane	0.019 - 0.03	3.0E-02	1.5E+03	NS	NO	DLBSL
67-66-3	Chloroform	0.019 - 0.03	3.0E-02	3.0E+00	C	NO	DLBSL
74-87-3	Chloromethane	0.019 - 0.03	3.0E-02	1.2E+02	N	NO	DLBSL
156-59-2	cis-1,2-Dichloroethene	0.019 - 0.03	3.0E-02	7.8E+02	N	NO	DLBSL
10061-01-5	cis-1,3-Dichloropropene	0.019 - 0.03	3.0E-02	1.7E+01	C*	NO	DLBSL
110-82-7	Cyclohexane	0.019 - 0.03	3.0E-02	1.2E+02	NS	NO	DLBSL
124-48-1	Dibromochloromethane	0.019 - 0.03	3.0E-02	6.8E+00	C	NO	DLBSL
75-71-8	Dichlorodifluoromethane (Freon-12)	0.019 - 0.03	3.0E-02	1.8E+02	N	NO	DLBSL
100-41-4	Ethylbenzene	0.019 - 0.03	3.0E-02	5.4E+01	C	NO	DLBSL
98-82-8	Isopropylbenzene	0.019 - 0.03	3.0E-02	2.7E+02	NS	NO	DLBSL
79-20-9	Methyl acetate	0.019 - 0.03	3.0E-02	2.9E+04	NS	NO	DLBSL
108-87-2	Methylcyclohexane	0.019 - 0.03	3.0E-02	NA		NO	NTX
75-09-2	Methylene chloride	0.019 - 0.03	3.0E-02	1.1E+02	C	NO	DLBSL
1634-04-4	Methyl-tert-butyl ether (MTBE)	0.019 - 0.03	3.0E-02	4.3E+02	C	NO	DLBSL
100-42-5	Styrene	0.019 - 0.03	3.0E-02	6.3E+02	NS	NO	DLBSL
127-18-4	Tetrachloroethene	0.019 - 0.03	3.0E-02	5.5E+00	C	NO	DLBSL

Table 12.1
Comparison of Non-Detected Chemicals to Regional Screening Levels
Sediment at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits MG/KG	Concentration Used for Screening MG/KG	Screening [1] Toxicity Value MG/KG		Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
108-88-3	Toluene	0.019 - 0.03	3.0E-02	5.0E+02	NS	NO	DLBSL
156-60-5	trans-1,2-Dichloroethene	0.019 - 0.03	3.0E-02	1.5E+02	N	NO	DLBSL
10061-02-6	trans-1,3-Dichloropropene	0.019 - 0.03	3.0E-02	1.7E+01	C*	NO	DLBSL
79-01-6	Trichloroethene	0.019 - 0.03	3.0E-02	2.8E+01	C	NO	DLBSL
75-69-4	Trichlorofluoromethane(Freon-11)	0.019 - 0.03	3.0E-02	7.9E+02	N	NO	DLBSL
75-01-4	Vinyl chloride	0.019 - 0.03	3.0E-02	6.0E-01	C	NO	DLBSL
92-52-4	1,1-Biphenyl	1.3 - 2.1	2.1E+00	2.1E+02	NS	NO	DLBSL
108-60-1	2,2'-Oxybis(1-chloropropane)	1.3 - 2.1	2.1E+00	4.6E+01	C	NO	DLBSL
95-95-4	2,4,5-Trichlorophenol	1.3 - 2.1	2.1E+00	6.1E+03	N	NO	DLBSL
88-06-2	2,4,6-Trichlorophenol	1.3 - 2.1	2.1E+00	6.1E+01	C**	NO	DLBSL
120-83-2	2,4-Dichlorophenol	1.3 - 2.1	2.1E+00	1.8E+02	N	NO	DLBSL
105-67-9	2,4-Dimethylphenol	1.3 - 2.1	2.1E+00	1.2E+03	N	NO	DLBSL
51-28-5	2,4-Dinitrophenol	6.5 - 11	1.1E+01	1.2E+02	N	NO	DLBSL
121-14-2	2,4-Dinitrotoluene	0.25 - 0.25	2.5E-01	1.6E+01	C*	NO	DLBSL
606-20-2	2,6-Dinitrotoluene	0.25 - 0.25	2.5E-01	6.1E+01	N	NO	DLBSL
91-58-7	2-Chloronaphthalene	1.3 - 2.1	2.1E+00	1.8E+02	NS	NO	DLBSL
95-57-8	2-Chlorophenol	1.3 - 2.1	2.1E+00	3.9E+02	N	NO	DLBSL
91-57-6	2-Methylnaphthalene	1.3 - 2.1	2.1E+00	3.1E+02	N	NO	DLBSL
95-48-7	2-Methylphenol	1.3 - 2.1	2.1E+00	3.1E+03	N	NO	DLBSL
88-74-4	2-Nitroaniline	6.5 - 11	1.1E+01	6.1E+02	N	NO	DLBSL
88-75-5	2-Nitrophenol	1.3 - 2.1	2.1E+00	3.9E+02	N	NO	DLBSL
91-94-1	3,3'-Dichlorobenzidine	1.3 - 2.1	2.1E+00	1.1E+01	C	NO	DLBSL
99-09-2	3-Nitroaniline	6.5 - 11	1.1E+01	2.4E+02	C*	NO	DLBSL
534-52-1	4,6-Dinitro-2-methylphenol	6.5 - 11	1.1E+01	4.9E+00	N	YES	DLASL
101-55-3	4-Bromophenyl-phenylether	1.3 - 2.1	2.1E+00	NA		NO	NTX
59-50-7	4-Chloro-3-methylphenol	1.3 - 2.1	2.1E+00	6.1E+03	N	NO	DLBSL
106-47-8	4-Chloroaniline	2.5 - 4.1	4.1E+00	2.4E+01	C	NO	DLBSL
7005-72-3	4-Chlorophenyl-phenylether	1.3 - 2.1	2.1E+00	3.1E+02	N	NO	DLBSL
106-44-5	4-Methylphenol	1.3 - 2.1	2.1E+00	3.1E+02	N	NO	DLBSL
100-01-6	4-Nitroaniline	6.5 - 11	1.1E+01	2.4E+02	C*	NO	DLBSL
100-02-7	4-Nitrophenol	6.5 - 11	1.1E+01	4.8E+01	C*	NO	DLBSL
83-32-9	Acenaphthene	1.3 - 2.1	2.1E+00	3.4E+03	N	NO	DLBSL
208-96-8	Acenaphthylene	1.3 - 2.1	2.1E+00	3.4E+03	N	NO	DLBSL
98-86-2	Acetophenone	1.3 - 2.1	2.1E+00	2.5E+03	NS	NO	DLBSL
120-12-7	Anthracene	1.3 - 2.1	2.1E+00	1.7E+04	N	NO	DLBSL
1912-24-9	Atrazine	1.3 - 2.1	2.1E+00	2.1E+01	C	NO	DLBSL
100-52-7	Benzaldehyde	1.3 - 2.1	2.1E+00	1.2E+03	NS	NO	DLBSL
56-55-3	Benzo(a)anthracene	1.3 - 2.1	2.1E+00	1.5E+00	C	YES	DLASL
50-32-8	Benzo(a)pyrene	1.3 - 2.1	2.1E+00	1.5E-01	C	YES	DLASL
205-99-2	Benzo(b)fluoranthene	1.3 - 2.1	2.1E+00	1.5E+00	C	YES	DLASL
191-24-2	Benzo(g,h,i)perylene	1.3 - 2.1	2.1E+00	1.7E+03	N	NO	DLBSL

Table 12.1
Comparison of Non-Detected Chemicals to Regional Screening Levels
Sediment at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits MG/KG	Concentration Used for Screening MG/KG	Screening [1] Toxicity Value MG/KG		Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
207-08-9	Benzo(k)fluoranthene	1.3 - 2.1	2.1E+00	1.5E+01	C	NO	DLBSL
111-91-1	bis(2-Chloroethoxy)methane	1.3 - 2.1	2.1E+00	1.8E+02	N	NO	DLBSL
111-44-4	bis(2-Chloroethyl)ether	1.3 - 2.1	2.1E+00	2.1E+00	C	YES	DLASL
117-81-7	bis(2-Ethylhexyl)phthalate	1.3 - 2.1	2.1E+00	3.5E+02	C*	NO	DLBSL
85-68-7	Butylbenzylphthalate	1.3 - 2.1	2.1E+00	2.6E+03	C*	NO	DLBSL
105-60-2	Caprolactam	1.3 - 2.1	2.1E+00	3.1E+04	N	NO	DLBSL
86-74-8	Carbazole	1.3 - 2.1	2.1E+00	NA		NO	NTX
218-01-9	Chrysene	1.3 - 2.1	2.1E+00	1.5E+02	C	NO	DLBSL
53-70-3	Dibenz(a,h)anthracene	1.3 - 2.1	2.1E+00	1.5E-01	C	YES	DLASL
132-64-9	Dibenzofuran	1.3 - 2.1	2.1E+00	7.8E+01	N	NO	DLBSL
84-66-2	Diethylphthalate	1.3 - 2.1	2.1E+00	4.9E+04	N	NO	DLBSL
131-11-3	Dimethyl phthalate	1.3 - 2.1	2.1E+00	NA		NO	NTX
84-74-2	Di-n-butylphthalate	1.3 - 2.1	2.1E+00	6.1E+03	N	NO	DLBSL
117-84-0	Di-n-octylphthalate	1.3 - 2.1	2.1E+00	3.5E+02	C*	NO	DLBSL
206-44-0	Fluoranthene	1.3 - 2.1	2.1E+00	2.3E+03	N	NO	DLBSL
86-73-7	Fluorene	1.3 - 2.1	2.1E+00	2.3E+03	N	NO	DLBSL
118-74-1	Hexachlorobenzene	1.3 - 2.1	2.1E+00	3.0E+00	C	NO	DLBSL
87-68-3	Hexachlorobutadiene	1.3 - 2.1	2.1E+00	6.1E+01	C**	NO	DLBSL
77-47-4	Hexachlorocyclopentadiene	1.3 - 2.1	2.1E+00	3.7E+02	N	NO	DLBSL
67-72-1	Hexachloroethane	1.3 - 2.1	2.1E+00	6.1E+01	C**	NO	DLBSL
193-39-5	Indeno(1,2,3-cd)pyrene	1.3 - 2.1	2.1E+00	1.5E+00	C	YES	DLASL
78-59-1	Isophorone	1.3 - 2.1	2.1E+00	5.1E+03	C*	NO	DLBSL
91-20-3	Naphthalene	1.3 - 2.1	2.1E+00	3.6E+01	C*	NO	DLBSL
621-64-7	n-Nitroso-di-n-propylamine	1.3 - 2.1	2.1E+00	6.9E-01	C	YES	DLASL
86-30-6	n-Nitrosodiphenylamine	1.3 - 2.1	2.1E+00	9.9E+02	C	NO	DLBSL
98-95-3	Nitrobenzene	0.25 - 0.25	2.5E-01	4.8E+01	C*	NO	DLBSL
87-86-5	Pentachlorophenol	6.5 - 11	1.1E+01	8.9E-01	C	YES	DLASL
85-01-8	Phenanthrene	1.3 - 2.1	2.1E+00	1.7E+04	N	NO	DLBSL
108-95-2	Phenol	1.3 - 2.1	2.1E+00	1.8E+04	N	NO	DLBSL
129-00-0	Pyrene	1.3 - 2.1	2.1E+00	1.7E+03	N	NO	DLBSL
72-54-8	4,4'-DDD	0.0063 - 0.01	1.0E-02	2.0E+01	C	NO	DLBSL
72-55-9	4,4'-DDE	0.0063 - 0.01	1.0E-02	1.4E+01	C	NO	DLBSL
50-29-3	4,4'-DDT	0.0063 - 0.01	1.0E-02	1.7E+01	C*	NO	DLBSL
309-00-2	Aldrin	0.0033 - 0.0053	5.3E-03	2.9E-01	C*	NO	DLBSL
319-84-6	alpha-BHC	0.0033 - 0.0053	5.3E-03	7.7E-01	C	NO	DLBSL
5103-71-9	alpha-Chlordane	0.0033 - 0.0053	5.3E-03	1.6E+01	C*	NO	DLBSL
12674-11-2	Aroclor-1016	0.063 - 0.1	1.0E-01	3.9E+00	N	NO	DLBSL
11104-28-2	Aroclor-1221	0.13 - 0.21	2.1E-01	1.4E+00	C	NO	DLBSL
11141-16-5	Aroclor-1232	0.063 - 0.1	1.0E-01	1.4E+00	C	NO	DLBSL
53469-21-9	Aroclor-1242	0.063 - 0.1	1.0E-01	2.2E+00	C	NO	DLBSL
12672-29-6	Aroclor-1248	0.063 - 0.1	1.0E-01	2.2E+00	C	NO	DLBSL

Table 12.1
Comparison of Non-Detected Chemicals to Regional Screening Levels
Sediment at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits MG/KG	Concentration Used for Screening MG/KG	Screening [1] Toxicity Value MG/KG		Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
11097-69-1	Aroclor-1254	0.063 - 0.1	1.0E-01	2.2E-01	C**	NO	DLBSL
11096-82-5	Aroclor-1260	0.063 - 0.1	1.0E-01	2.2E+00	C	NO	DLBSL
319-85-7	beta-BHC	0.0033 - 0.0053	5.3E-03	2.7E+00	C	NO	DLBSL
319-86-8	delta-BHC	0.0033 - 0.0053	5.3E-03	2.7E+00	C	NO	DLBSL
60-57-1	Dieldrin	0.0063 - 0.01	1.0E-02	3.0E-01	C	NO	DLBSL
959-98-8	Endosulfan I	0.0033 - 0.0053	5.3E-03	3.7E+02	N	NO	DLBSL
33213-65-9	Endosulfan II	0.0063 - 0.01	1.0E-02	3.7E+02	N	NO	DLBSL
1031-07-8	Endosulfan sulfate	0.0063 - 0.01	1.0E-02	3.7E+02	N	NO	DLBSL
72-20-8	Endrin	0.0063 - 0.01	1.0E-02	1.8E+01	N	NO	DLBSL
7421-93-4	Endrin aldehyde	0.0063 - 0.01	1.0E-02	1.8E+01	N	NO	DLBSL
53494-70-5	Endrin ketone	0.0063 - 0.01	1.0E-02	1.8E+01	N	NO	DLBSL
58-89-9	gamma-BHC (Lindane)	0.0033 - 0.0053	5.3E-03	5.2E+00	C*	NO	DLBSL
5103-74-2	gamma-Chlordane	0.0033 - 0.0053	5.3E-03	1.6E+01	C*	NO	DLBSL
76-44-8	Heptachlor	0.0033 - 0.0053	5.3E-03	1.1E+00	C	NO	DLBSL
1024-57-3	Heptachlor epoxide	0.0033 - 0.0053	5.3E-03	5.3E-01	C*	NO	DLBSL
72-43-5	Methoxychlor	0.033 - 0.053	5.3E-02	3.1E+02	N	NO	DLBSL
8001-35-2	Toxaphene	0.33 - 0.53	5.3E-01	4.4E+00	C	NO	DLBSL
99-35-4	1,3,5-Trinitrobenzene	0.25 - 0.25	2.5E-01	2.2E+03	N	NO	DLBSL
99-65-0	1,3-Dinitrobenzene	0.25 - 0.25	2.5E-01	6.1E+00	N	NO	DLBSL
118-96-7	2,4,6-Trinitrotoluene	0.25 - 0.25	2.5E-01	3.6E+01	C**	NO	DLBSL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.3 - 0.3	3.0E-01	1.5E+02	N	NO	DLBSL
88-72-2	2-Nitrotoluene	0.25 - 0.25	2.5E-01	6.1E+00	N	NO	DLBSL
618-87-1	3,5-Dinitroaniline	1.3 - 1.3	1.3E+00	6.1E+00	N	NO	DLBSL
99-08-1	3-Nitrotoluene	0.25 - 0.25	2.5E-01	6.1E+00	N	NO	DLBSL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.25 - 0.25	2.5E-01	1.5E+02	N	NO	DLBSL
99-99-0	4-Nitrotoluene	0.5 - 0.5	5.0E-01	2.4E+02	C**	NO	DLBSL
2691-41-0	HMX	0.25 - 0.25	2.5E-01	3.9E+03	N	NO	DLBSL
55-63-0	Nitroglycerin	0.5 - 0.5	5.0E-01	6.1E+00	N	NO	DLBSL
556-88-7	Nitroguanidine	0.25 - 0.25	2.5E-01	6.1E+03	N	NO	DLBSL
78-11-5	PETN	0.5 - 0.5	5.0E-01	NA		NO	NTX
121-82-4	RDX	0.25 - 0.25	2.5E-01	5.5E+01	C*	NO	DLBSL
479-45-8	Tetryl	0.25 - 0.25	2.5E-01	2.4E+02	N	NO	DLBSL
7440-36-0	Antimony	8.1 - 13.5	1.4E+01	3.1E+01	N	NO	DLBSL
57-12-5	Cyanide	4.1 - 6.4	6.4E+00	1.6E+03	N	NO	DLBSL
7782-49-2	Selenium	4.7 - 7.9	7.9E+00	3.9E+02	N	NO	DLBSL
7440-28-0	Thallium	3.4 - 5.6	5.6E+00	NA		NO	NTX

Table 12.1
Comparison of Non-Detected Chemicals to Regional Screening Levels
Sediment at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits MG/KG	Concentration Used for Screening MG/KG	Screening [1] Toxicity Value MG/KG	Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection

[1] Oak Ridge National Laboratory (ORNL). Nov. 2011. Regional Screening Levels for Chemical Contaminants at Superfund Sites.
Ten times residential soil RSL. [Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml

RSL value for 1,4-dichlorobenzene used as surrogate for 1,3-dichlorobenzene

RSL value for 2-Nitroaniline used as surrogate for 3-Nitroaniline.

RSL value for 1,3-dinitrobenzene used ad a surrogate for 3,5-dinitroaniline.

RSL value for Methyl Isobutyl Ketone (4-methyl-2-pentanone) used as surrogate for 2-Hexanone.

RSL value for methoxychlor used as surrogate for 4-Chlorophenyl-phenylether.

RSL value for Nitrobenzene used as surrogate for 4-Nitrophenol.

RSL value for Acenaphthene used as surrogate for Acenaphthylene.

RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.

RSL value for anthracene used as surrogate for phenanthrene.

RSL value for technical chlordane used as surrogate for alpha-chlordane.

RSL value for Facilities, USEPA, July 14, 1994.

RSL value for technical chlordane used as surrogate for gamma-chlordane.

The soil value of 400 mg/kg for lead is from the Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action

Definitions: C = Carcinogenic

C* = Carcinogenic, N screening level < 100x C screening level, C screening value used as screening level

C** = N screening level < 10x C screening level, therefore N screening value/10 used as screening level

N = Noncarcinogenic

NS = Noncarcinogenic, concentration may exceed Csat.

NTX = No Toxicity Information

DLBSL = Detection limit below screening level

DLASL = Detection limit above screening level

MG/KG = milligrams per kilogram

Table 12.2
Comparison of Non-Detected Chemicals to Regional Screening Levels
Surface Water at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening [1] Toxicity Value ug/L		Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
71-55-6	1,1,1-Trichloroethane	10 - 10	1.0E+01	9.1E+03	N	NO	DLBSL
79-34-5	1,1,2,2-Tetrachloroethane	10 - 10	1.0E+01	6.7E-01	C	YES	DLASL
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	10 - 10	1.0E+01	5.9E+04	N	NO	DLBSL
79-00-5	1,1,2-Trichloroethane	10 - 10	1.0E+01	2.4E+00	C	YES	DLASL
75-34-3	1,1-Dichloroethane	10 - 10	1.0E+01	2.4E+01	C	NO	DLBSL
75-35-4	1,1-Dichloroethene	10 - 10	1.0E+01	3.4E+02	N	NO	DLBSL
120-82-1	1,2,4-Trichlorobenzene	10 - 10	1.0E+01	4.1E+00	C**	YES	DLASL
96-12-8	1,2-Dibromo-3-chloropropane	10 - 10	1.0E+01	3.2E-03	C	YES	DLASL
106-93-4	1,2-Dibromoethane	10 - 10	1.0E+01	6.5E-02	C	YES	DLASL
95-50-1	1,2-Dichlorobenzene	10 - 10	1.0E+01	3.7E+02	N	NO	DLBSL
107-06-2	1,2-Dichloroethane	10 - 10	1.0E+01	1.5E+00	C	YES	DLASL
78-87-5	1,2-Dichloropropane	10 - 10	1.0E+01	3.9E+00	C*	YES	DLASL
541-73-1	1,3-Dichlorobenzene	10 - 10	1.0E+01	4.3E+00	C	YES	DLASL
106-46-7	1,4-Dichlorobenzene	10 - 10	1.0E+01	4.3E+00	C	YES	DLASL
78-93-3	2-Butanone	10 - 10	1.0E+01	7.1E+03	N	NO	DLBSL
591-78-6	2-Hexanone	10 - 10	1.0E+01	4.7E+01	N	NO	DLBSL
108-10-1	4-Methyl-2-pentanone	10 - 10	1.0E+01	2.0E+03	N	NO	DLBSL
67-64-1	Acetone	10 - 10	1.0E+01	2.2E+04	N	NO	DLBSL
71-43-2	Benzene	10 - 10	1.0E+01	4.1E+00	C	YES	DLASL
75-27-4	Bromodichloromethane	10 - 10	1.0E+01	1.2E+00	C	YES	DLASL
75-25-2	Bromoform	10 - 10	1.0E+01	8.5E+01	C*	NO	DLBSL
74-83-9	Bromomethane	10 - 10	1.0E+01	8.7E+00	N	YES	DLASL
75-15-0	Carbon disulfide	10 - 10	1.0E+01	1.0E+03	N	NO	DLBSL
56-23-5	Carbon tetrachloride	10 - 10	1.0E+01	4.4E-01	C	YES	DLASL
108-90-7	Chlorobenzene	10 - 10	1.0E+01	9.1E+01	N	NO	DLBSL
75-00-3	Chloroethane	10 - 10	1.0E+01	2.1E+04	N	NO	DLBSL
67-66-3	Chloroform	10 - 10	1.0E+01	1.9E+00	C	YES	DLASL
74-87-3	Chloromethane	10 - 10	1.0E+01	1.9E+02	N	NO	DLBSL
156-59-2	cis-1,2-Dichloroethene	10 - 10	7.3E+01	7.0E+00	N	YES	DLASL
10061-01-5	cis-1,3-Dichloropropene	10 - 10	1.0E+01	4.3E+00	C*	YES	DLASL
110-82-7	Cyclohexane	10 - 10	1.0E+01	1.3E+04	N	NO	DLBSL
124-48-1	Dibromochloromethane	10 - 10	1.0E+01	1.5E+00	C	YES	DLASL
75-71-8	Dichlorodifluoromethane (Freon-12)	10 - 10	1.0E+01	3.9E+02	N	NO	DLBSL
100-41-4	Ethylbenzene	10 - 10	1.0E+01	1.5E+01	C	NO	DLBSL
98-82-8	Isopropylbenzene	10 - 10	1.0E+01	6.8E+02	N	NO	DLBSL
79-20-9	Methyl acetate	10 - 10	1.0E+01	3.7E+04	N	NO	DLBSL
108-87-2	Methylcyclohexane	10 - 10	1.0E+01	NA		NO	NTX
75-09-2	Methylene chloride	10 - 10	1.0E+01	4.8E+01	C	NO	DLBSL
1634-04-4	Methyl-tert-butyl ether (MTBE)	10 - 10	1.0E+01	1.2E+01	C	NO	DLBSL

Table 12.2
Comparison of Non-Detected Chemicals to Regional Screening Levels
Surface Water at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening [1] Toxicity Value ug/L		Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
100-42-5	Styrene	10 - 10	1.0E+01	1.6E+03	N	NO	DLBSL
127-18-4	Tetrachloroethene	10 - 10	1.0E+01	1.1E+00	C	YES	DLASL
108-88-3	Toluene	10 - 10	1.0E+01	2.3E+03	N	NO	DLBSL
156-60-5	trans-1,2-Dichloroethene	10 - 10	1.0E+01	1.1E+02	N	NO	DLBSL
10061-02-6	trans-1,3-Dichloropropene	10 - 10	1.0E+01	4.3E+00	C*	YES	DLASL
79-01-6	Trichloroethene	10 - 10	1.0E+01	2.0E+00	C	YES	DLASL
75-69-4	Trichlorofluoromethane(Freon-11)	10 - 10	1.0E+01	1.3E+03	N	NO	DLBSL
75-01-4	Vinyl chloride	10 - 10	1.0E+01	1.6E-01	C	YES	DLASL
1330-20-7	Xylene, total	10 - 10	1.0E+01	2.0E+02	N	NO	DLBSL
92-52-4	1,1-Biphenyl	9.4 - 9.8	9.8E+00	1.8E+03	N	NO	DLBSL
108-60-1	2,2'-Oxybis(1-chloropropane)	9.4 - 9.8	9.8E+00	3.2E+00	C	YES	DLASL
95-95-4	2,4,5-Trichlorophenol	9.4 - 9.8	9.8E+00	3.7E+03	N	NO	DLBSL
88-06-2	2,4,6-Trichlorophenol	9.4 - 9.8	9.8E+00	3.7E+01	C**	NO	DLBSL
120-83-2	2,4-Dichlorophenol	9.4 - 9.8	9.8E+00	1.1E+02	N	NO	DLBSL
105-67-9	2,4-Dimethylphenol	9.4 - 9.8	9.8E+00	7.3E+02	N	NO	DLBSL
51-28-5	2,4-Dinitrophenol	47 - 49	4.9E+01	7.3E+01	N	NO	DLBSL
121-14-2	2,4-Dinitrotoluene	0.15 - 0.16	1.6E-01	2.2E+00	C	NO	DLBSL
606-20-2	2,6-Dinitrotoluene	0.15 - 0.16	1.6E-01	3.7E+01	N	NO	DLBSL
91-58-7	2-Chloronaphthalene	9.4 - 9.8	9.8E+00	2.9E+03	N	NO	DLBSL
95-57-8	2-Chlorophenol	9.4 - 9.8	9.8E+00	1.8E+02	N	NO	DLBSL
95-48-7	2-Methylphenol	9.4 - 9.8	9.8E+00	1.8E+03	N	NO	DLBSL
88-74-4	2-Nitroaniline	47 - 49	4.9E+01	3.7E+02	N	NO	DLBSL
88-75-5	2-Nitrophenol	9.4 - 9.8	9.8E+00	1.8E+02	N	NO	DLBSL
91-94-1	3,3'-Dichlorobenzidine	19 - 20	2.0E+01	1.5E+00	C	YES	DLASL
99-09-2	3-Nitroaniline	47 - 49	4.9E+01	3.7E+02	N	NO	DLBSL
534-52-1	4,6-Dinitro-2-methylphenol	47 - 49	4.9E+01	2.9E-01	N	YES	DLASL
101-55-3	4-Bromophenyl-phenylether	9.4 - 9.8	9.8E+00	NA		NO	NTX
59-50-7	4-Chloro-3-methylphenol	9.4 - 9.8	9.8E+00	3.7E+03	N	NO	DLBSL
106-47-8	4-Chloroaniline	19 - 20	2.0E+01	3.4E+00	C	YES	DLASL
7005-72-3	4-Chlorophenyl-phenylether	9.4 - 9.8	9.8E+00	1.8E+02	N	NO	DLBSL
106-44-5	4-Methylphenol	9.4 - 9.8	9.8E+00	1.8E+02	N	NO	DLBSL
100-01-6	4-Nitroaniline	47 - 49	4.9E+01	3.4E+01	C*	YES	DLASL
100-02-7	4-Nitrophenol	47 - 49	4.9E+01	1.2E+00	C	YES	DLASL
83-32-9	Acenaphthene	9.4 - 9.8	9.8E+00	2.2E+03	N	NO	DLBSL
208-96-8	Acenaphthylene	9.4 - 9.8	9.8E+00	2.2E+03	N	NO	DLBSL
98-86-2	Acetophenone	9.4 - 9.8	9.8E+00	3.7E+03	N	NO	DLBSL
120-12-7	Anthracene	9.4 - 9.8	9.8E+00	1.1E+04	N	NO	DLBSL
1912-24-9	Atrazine	9.4 - 9.8	9.8E+00	2.9E+00	C	YES	DLASL
100-52-7	Benzaldehyde	9.4 - 9.8	9.8E+00	3.7E+03	N	NO	DLBSL
56-55-3	Benzo(a)anthracene	9.4 - 9.8	9.8E+00	2.9E-02	C	YES	DLASL
50-32-8	Benzo(a)pyrene	9.4 - 9.8	9.8E+00	2.9E-03	C	YES	DLASL

Table 12.2
Comparison of Non-Detected Chemicals to Regional Screening Levels
Surface Water at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening [1] Toxicity Value ug/L		Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
205-99-2	Benzo(b)fluoranthene	9.4 - 9.8	9.8E+00	2.9E-02	C	YES	DLASL
191-24-2	Benzo(g,h,i)perylene	9.4 - 9.8	9.8E+00	1.1E+03	N	NO	DLBSL
207-08-9	Benzo(k)fluoranthene	9.4 - 9.8	9.8E+00	2.9E-01	C	YES	DLASL
111-91-1	bis(2-Chloroethoxy)methane	9.4 - 9.8	9.8E+00	1.1E+02	N	NO	DLBSL
111-44-4	bis(2-Chloroethyl)ether	9.4 - 9.8	9.8E+00	1.2E-01	C	YES	DLASL
117-81-7	bis(2-Ethylhexyl)phthalate	9.4 - 9.8	9.8E+00	4.8E+01	C	NO	DLBSL
85-68-7	Butylbenzylphthalate	9.4 - 9.8	9.8E+00	3.5E+02	C	NO	DLBSL
105-60-2	Caprolactam	9.4 - 9.8	9.8E+00	1.8E+04	N	NO	DLBSL
86-74-8	Carbazole	9.4 - 9.8	9.8E+00	NA		NO	NTX
218-01-9	Chrysene	9.4 - 9.8	9.8E+00	2.9E+00	C	YES	DLASL
53-70-3	Dibenz(a,h)anthracene	9.4 - 9.8	9.8E+00	2.9E-03	C	YES	DLASL
132-64-9	Dibenzofuran	9.4 - 9.8	9.8E+00	3.7E+01	N	NO	DLBSL
84-66-2	Diethylphthalate	9.4 - 9.8	9.8E+00	2.9E+04	N	NO	DLBSL
131-11-3	Dimethyl phthalate	9.4 - 9.8	9.8E+00	NA		NO	NTX
84-74-2	Di-n-butylphthalate	9.4 - 9.8	9.8E+00	3.7E+03	N	NO	DLBSL
117-84-0	Di-n-octylphthalate	9.4 - 9.8	9.8E+00	4.8E+01	C	NO	DLBSL
206-44-0	Fluoranthene	9.4 - 9.8	9.8E+00	1.5E+03	N	NO	DLBSL
86-73-7	Fluorene	9.4 - 9.8	9.8E+00	1.5E+03	N	NO	DLBSL
118-74-1	Hexachlorobenzene	9.4 - 9.8	9.8E+00	4.2E-01	C	YES	DLASL
87-68-3	Hexachlorobutadiene	9.4 - 9.8	9.8E+00	8.6E+00	C*	YES	DLASL
77-47-4	Hexachlorocyclopentadiene	9.4 - 9.8	9.8E+00	2.2E+02	N	NO	DLBSL
67-72-1	Hexachloroethane	9.4 - 9.8	9.8E+00	3.7E+01	C**	NO	DLBSL
193-39-5	Indeno(1,2,3-cd)pyrene	9.4 - 9.8	9.8E+00	2.9E-02	C	YES	DLASL
78-59-1	Isophorone	9.4 - 9.8	9.8E+00	7.1E+02	C	NO	DLBSL
91-20-3	Naphthalene	9.4 - 9.8	9.8E+00	1.4E+00	C*	YES	DLASL
621-64-7	n-Nitroso-di-n-propylamine	9.4 - 9.8	9.8E+00	9.6E-02	C	YES	DLASL
86-30-6	n-Nitrosodiphenylamine	9.4 - 9.8	9.8E+00	1.4E+02	C	NO	DLBSL
87-86-5	Pentachlorophenol	47 - 49	4.9E+01	1.7E-01	C	YES	DLASL
85-01-8	Phenanthrene	9.4 - 9.8	9.8E+00	1.1E+04	N	NO	DLBSL
108-95-2	Phenol	9.4 - 9.8	9.8E+00	1.1E+04	N	NO	DLBSL
129-00-0	Pyrene	9.4 - 9.8	9.8E+00	1.1E+03	N	NO	DLBSL
72-54-8	4,4'-DDD	0.094 - 0.099	9.9E-02	2.8E+00	C	NO	DLBSL
72-55-9	4,4'-DDE	0.094 - 0.099	9.9E-02	2.0E+00	C	NO	DLBSL
50-29-3	4,4'-DDT	0.094 - 0.099	9.9E-02	2.0E+00	C*	NO	DLBSL
309-00-2	Aldrin	0.047 - 0.05	5.0E-02	4.0E-02	C	YES	DLASL
319-84-6	alpha-BHC	0.047 - 0.05	5.0E-02	1.1E-01	C	NO	DLBSL
5103-71-9	alpha-Chlordane	0.047 - 0.05	5.0E-02	1.9E+00	C*	NO	DLBSL
12674-11-2	Aroclor-1016	0.94 - 0.99	9.9E-01	2.6E+00	C**	NO	DLBSL
11104-28-2	Aroclor-1221	1.9 - 2	2.0E+00	6.8E-02	C	YES	DLASL
11141-16-5	Aroclor-1232	0.94 - 0.99	9.9E-01	6.8E-02	C	YES	DLASL
53469-21-9	Aroclor-1242	0.94 - 0.99	9.9E-01	3.4E-01	C	YES	DLASL

Table 12.2
Comparison of Non-Detected Chemicals to Regional Screening Levels
Surface Water at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening [1] Toxicity Value ug/L		Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection
12672-29-6	Aroclor-1248	0.94 - 0.99	9.9E-01	3.4E-01	C	YES	DLASL
11097-69-1	Aroclor-1254	0.94 - 0.99	9.9E-01	3.4E-01	C*	YES	DLASL
11096-82-5	Aroclor-1260	0.94 - 0.99	9.9E-01	3.4E-01	C	YES	DLASL
319-85-7	beta-BHC	0.047 - 0.05	5.0E-02	3.7E-01	C	NO	DLBSL
319-86-8	delta-BHC	0.047 - 0.05	5.0E-02	3.7E-01	C	NO	DLBSL
60-57-1	Dieldrin	0.094 - 0.099	9.9E-02	4.2E-02	C	YES	DLASL
959-98-8	Endosulfan I	0.047 - 0.05	5.0E-02	2.2E+02	N	NO	DLBSL
33213-65-9	Endosulfan II	0.094 - 0.099	9.9E-02	2.2E+02	N	NO	DLBSL
1031-07-8	Endosulfan sulfate	0.094 - 0.099	9.9E-02	2.2E+02	N	NO	DLBSL
72-20-8	Endrin	0.094 - 0.099	9.9E-02	1.1E+01	N	NO	DLBSL
7421-93-4	Endrin aldehyde	0.094 - 0.099	9.9E-02	1.1E+01	N	NO	DLBSL
53494-70-5	Endrin ketone	0.094 - 0.099	9.9E-02	1.1E+01	N	NO	DLBSL
58-89-9	gamma-BHC (Lindane)	0.047 - 0.05	5.0E-02	6.1E-01	C	NO	DLBSL
5103-74-2	gamma-Chlordane	0.047 - 0.05	5.0E-02	1.9E+00	C*	NO	DLBSL
76-44-8	Heptachlor	0.047 - 0.05	5.0E-02	1.5E-01	C	NO	DLBSL
1024-57-3	Heptachlor epoxide	0.047 - 0.05	5.0E-02	7.4E-02	C*	NO	DLBSL
72-43-5	Methoxychlor	0.47 - 0.5	5.0E-01	1.8E+02	N	NO	DLBSL
8001-35-2	Toxaphene	4.7 - 5	5.0E+00	6.1E-01	C	YES	DLASL
99-35-4	1,3,5-Trinitrobenzene	0.098 - 0.1	1.0E-01	1.1E+03	N	NO	DLBSL
99-65-0	1,3-Dinitrobenzene	0.15 - 0.16	1.6E-01	3.7E+00	N	NO	DLBSL
118-96-7	2,4,6-Trinitrotoluene	0.15 - 0.16	1.6E-01	1.8E+01	C**	NO	DLBSL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.29 - 0.32	3.2E-01	7.3E+01	N	NO	DLBSL
88-72-2	2-Nitrotoluene	0.49 - 0.52	5.2E-01	3.1E+00	C	NO	DLBSL
618-87-1	3,5-Dinitroaniline	0.98 - 1	1.0E+00	3.7E+00	N	NO	DLBSL
99-08-1	3-Nitrotoluene	0.49 - 0.52	5.2E-01	3.7E+00	N	NO	DLBSL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.15 - 0.16	1.6E-01	7.3E+01	N	NO	DLBSL
99-99-0	4-Nitrotoluene	0.49 - 0.52	5.2E-01	4.2E+01	C*	NO	DLBSL
55-63-0	Nitroglycerin	0.98 - 1	1.0E+00	3.7E+00	N	NO	DLBSL
78-11-5	PETN	0.98 - 1	1.0E+00	NA		NO	NTX
479-45-8	Tetryl	0.15 - 0.16	1.6E-01	1.5E+02	N	NO	DLBSL
7440-36-0	Antimony	60 - 60	6.0E+01	1.5E+01	N	YES	DLASL
7440-48-4	Cobalt	50 - 50	5.0E+01	1.1E+01	N	YES	DLASL
7440-50-8	Copper	25 - 25	2.5E+01	1.5E+03	N	NO	DLBSL
57-12-5	Cyanide	10 - 10	1.0E+01	7.3E+02	N	NO	DLBSL
7439-92-1	Lead	10 - 50	5.0E+01	NA		NO	NTX
7439-97-6	Mercury	0.2 - 0.2	2.0E-01	1.1E+01	N	NO	DLBSL
7440-28-0	Thallium	25 - 125	1.3E+02	NA		NO	NTX
7440-62-2	Vanadium	50 - 50	5.0E+01	1.8E+02	N	NO	DLBSL
7440-66-6	Zinc	60 - 60	6.0E+01	1.1E+04	N	NO	DLBSL

[1] Oak Ridge National Laboratory (ORNL). Nov. 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites. Ten times tap water RSL. [Online]. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml

RSL value for 1,4-dichlorobenzene used as surrogate for 1,3-dichlorobenzene

RSL value for Methyl Isobutyl Ketone (4-methyl-2-pentanone) used as surrogate for 2-Hexanone.

RSL value for methoxychlor used as surrogate for 4-Chlorophenyl-phenylether.

RSL value for Nitrobenzene used as surrogate for 4-Nitrophenol.

RSL value for 2-Nitroaniline used as surrogate for 3-Nitroaniline.

Table 12.2
Comparison of Non-Detected Chemicals to Regional Screening Levels
Surface Water at Sites 8 and 34, Yorktown

CAS Number	Chemical	Range of Detection Limits ug/L	Concentration Used for Screening ug/L	Screening [1] Toxicity Value ug/L	Exceeds Screening Value?	Rationale for Contaminant Deletion or Selection

RSL value for Acenaphthene used as surrogate for Acenaphthylene.
RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.
RSL value for anthracene used as surrogate for phenanthrene.
RSL value for technical chlordane used as surrogate for alpha-chlordane.
RSL value for technical-HCH used as surrogate for delta-BHC.
RSL value for technical chlordane used as surrogate for gamma-chlordane.
RSL value for 1,3-dinitrobenzene used ad a surrogate for 3,5-dinitroaniline.
RSL value for Manganese (water) used as surrogate for manganese.
RSL value for Mercury (inorganic salts) used as surrogate for mercury.
RSL value for 1,3-dichloropropene used as a surrogate for cis-1,3-dichloropropene and trans-1,3-dichloropropene.
RSL value for endosulfan used as surrogate for endosulfan I, endosulfan II, and endosulfan sulfate.
RSL value for endrin used as surrogate for endrin aldehyde and endrin ketone.
RSL value for 2-chlorophenol used as surrogate for 4-chloro-3-methylphenol and 2-nitrophenol.

Definitions: C = Carcinogenic
C* = Carcinogenic, N screening level < 100x C screening level, C screening value used as screening level
C** = N screening level < 10x C screening level, therefore N screening value/10 used as screening level
N = Noncarcinogenic
NS = Noncarcinogenic, concentration may exceed Csat.
NTX = No Toxicity Information
DLBSL = Detection limit below screening level
DLASL = Detection limit above screening level
ug/L = micrograms per liter